UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Washington, D.C. 20235

AUG - 5 1988

MEMORANDUM FOR: Distribution* Don

FROM: F/CM2 - Donald J. Leedy

SUBJECT: Review of two Groundfish Plan Amendments

Attached for your review and comment are the following final plan amendments submitted for Secretarial review by the North Pacific Fishery Management Council:

Amendment 12 - Fishery Management Plan for the Groundfish Fishery of the Bering Sea/Aleutian Islands

Amendment 17 - Fishery Management Plan for the Groundfish Fishery of the Gulf of Alaska

The combined document includes the Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis.

Please provide your review and comment by August 31, 1988. If you have any questions, please contact me at 673-5272.

Attachment

*Distribution

F/CM - Schaefer, Fricke, Surdi, Hochman
F/EN - Pallozzi
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F/TS3 - Bentz
F/PR2 - Karnella
F/PR3 - Gessner
F/RE1 - Holliday
F/RE3 - Meehan
F/IA1 - Swanson (Rothschild)
CS/EC - Cottingham
OGC - Malone
GC - Keeney
N/ORM4 - Evans
OMB - Griffin

ENVIRONMENTAL ASSESSMENT

AND

REGULATORY IMPACT REVIEW/INITIAL REGULATORY FLEXIBILITY ANALYSIS

FOR AMENDMENT 12

TO THE FISHERY MANAGEMENT PLAN FOR THE

GROUNDFISH FISHERY OF THE BERING SEA/ALEUTIAN ISLANDS

AND FOR AMENDMENT 17

TO THE FISHERY MANAGEMENT PLAN FOR THE

GROUNDFISH FISHERY OF THE GULF OF ALASKA

Prepared by the Plan Teams for the
Groundfish Fisheries of the Bering Sea/Aleutian Islands
and the Gulf of Alaska, and the Staff of the
North Pacific Fishery Management Council

Anchorage, Alaska

August 2, 1988

SUMMARY OF AMENDMENTS 12 AND 17 TO THE FISHERY MANAGEMENT PLANS FOR THE GROUNDFISH FISHERIES OF THE BERING SEA/ALEUTIAN ISLANDS AND THE GULF OF ALASKA

As part of the annual plan amendment cycle for the Gulf of Alaska (GOA) and the Bering Sea/Aleutian Islands (BS/AI) groundfish fishery management plans (FMPs) the North Pacific Fishery Management Council reviews proposed changes submitted by the public and management agencies. Upon recommendations of the Plan Amendment Advisory Group (PAAG), the Advisory Panel (AP), and the Scientific and Statistical Committee (SSC) the Council forwards those proposals of merit to the Plan Teams (PTs) for analyses in January and reviews the initial analyses in April. Soon after the April Council meeting a draft amendment package, including a draft environmental assessment/regulatory impact review/initial regulatory flexibility analysis (EA/RIR/IRFA) is released for public comment. In June the Council reviews the public comment and decides which amendment issues should go forward for approval and implementation by the Secretary of Commerce.

At their meeting on June 21-24, 1988, the Council approved one proposal for the Gulf of Alaska FMP and four proposals for the Bering Sea/Aleutian Islands FMP:

(a) Federal Permit Requirements - to require all floating processors receiving fish from federal waters to hold a federal permit and make weekly reports on catch (GOA and BS/AI FMPs).

(b) Prohibited Species Catch (PSC) Limits for Fully-Utilized Groundfish - to establish limits on the JVP and TALFF bycatch of groundfish species for which the TAC has, or soon would be, attained (BS/AI FMP).

(c) Resource Assessment Document (RAD) Deadline - to remove the current requirement that the RAD be produced by July 1 of each year (BS/AI FMP).

(d) Rock Sole TAC - to establish rock sole as a target species distinct from the "other flatfish" species group (BS/AI FMP).

This EA/RIR/IRFA presents the Council's assessment of likely impacts resulting from the implementation of Amendment 12 to the Bering Sea/Aleutian Islands Groundfish FMP and Amendment 17 to the Gulf of Alaska Groundfish FMP.

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1.0 INTRODUCTION

Domestic and foreign groundfish fisheries in the Exclusive Economic Zone (EEZ) of the United States (3-200 miles offshore) in the Gulf of Alaska and in the Bering Sea and around the Aleutian Islands are managed under the Fishery Management Plans (FMPs) for the Groundfish Fishery of the Gulf of Alaska (GOA) and for the Groundfish Fishery of the Bering Sea and Aleutian Islands (BS/AI). The FMPs were developed by the North Pacific Fishery Management Council under authority of the Magnuson Fishery Conservation and Management Act (Magnuson Act). Both FMPs were approved by the Assistant Administrator for Fisheries of the National Oceanic and Atmospheric Administration (NOAA); the GOA FMP became effective on December 11, 1978 (43 FR 52709, November 14, 1978) and the BS/AI FMP became effective on January 1, 1982 (46 FR 63295, December 31, 1981). The FMPs are implemented by Federal regulations appearing at 50 CFR Parts 611, 672 and 675. Fifteen of sixteen amendments to the GOA FMP and nine of eleven amendments to the BS/AI FMP have subsequently been implemented.

The Council solicits public recommendations for amending the FMPs on an annual basis. Amendment proposals are then reviewed by the Council's GOA and BS/AI Plan Teams (PTs), Plan Amendment Advisory Group (PAAG), Advisory Panel (AP), and Scientific and Statistical Committee (SSC). These advisory bodies make recommendations to the Council on which proposals merit consideration for plan amendment. Amendment proposals and appropriate alternatives accepted by the Council are then analyzed by the PTs for their efficacy and for their potential biological and socioeconomic impacts. After reviewing this analysis, the AP and SSC make recommendations as to whether the amendment alternatives should be rejected or changed in any way, whether and how the analysis should be refined, and whether to release the analysis for general public review and comment. If an amendment proposal and accompanying analysis is released for public review, then the AP, SSC, and the Council will consider subsequent public comments before deciding whether or not to submit the proposal to the Secretary of Commerce for approval and implementation.

1.1 List of Amendment Proposals

As a result of Council deliberation at its meeting on June 21-24, 1988, four amendment proposals are forwarded to the Secretary of Commerce for approval and implementation as Amendment 12 to the Bering Sea/Aleutian Islands Groundfish FMP and one of those also as Amendment 17 to the Gulf of Alaska Groundfish FMP:

(a) Revise federal permit requirements to include all floating processors that receive groundfish from the EEZ (Gulf of Alaska and Bering Sea/Aleutian Islands FMPs).

(b) Establish prohibited species catch (PSC) limits for fully-utilized species of groundfish (Bering Sea/Aleutian Islands FMP).

(c) Eliminate July 1 deadline for Resource Assessment Document (Bering Sea/Aleutian Islands FMP).

(d) Separate rock sole from the "other flatfish" species group (Bering Sea/Aleutian Islands FMP).

1.2 Purpose of the Document

This document provides background information and assessments necessary for the Secretary of Commerce to determine that the FMP amendments are consistent with the Magnuson Act and other applicable law. Other principal statutory requirements that this document is intended to satisfy are the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act (RFA),

and Executive Order 12291 (E.O. 12291); other applicable law addressed by this document include the Coastal Zone Management Act, the Endangered Species Act, and the Marine Mammal Protection Act.

1.3 Description of the Domestic Fishing Fleet

The domestic fleet in the Gulf of Alaska and Bering Sea/Aleutian Islands is made up of vessels targeting on several species of fish, including halibut and groundfish. The halibut fleet is larger than the groundfish fleet. Some of the halibut vessels fish groundfish and some of the groundfish vessels fish halibut.

1.3.1 Halibut Fleet

Information obtained from the International Pacific Halibut Commission shows that 3,893 U.S. vessels reported halibut landings in 1987, which is an increase of 14% from 1986. Increases by area within the Gulf of Alaska were 10% in Area 2C, 19% in Area 3A and 4% in Area 3B. In 1987, about 63% of the fleet was larger than 5 net tons and 23% were larger than 20 net tons, which represented only slight increases from 1986.

1.3.2 Groundfish Fleet

As of April 16, 1988, NMFS has issued 1,775 permits to fish groundfish in the Bering Sea/Aleutian Islands and Gulf of Alaska in 1988 (Table 1.1). This number includes vessels that engage only in harvesting operations (catcher vessels), vessels that harvest and process their catches (catcher/processor vessels), vessels that will only process fish (motherhip/processor vessels), and support vessels that will engage in transporting fishermen, fuel, groceries, and other supplies.

Seven percent of the total vessels, or 131 vessels, are less than 5 net tons. Ninety-three percent, or 1,644 vessels are 5 net tons or larger.

They are located (see Table 1.2, below) in non-Alaska ports, including Seattle, and Alaska ports, including Sitka, Kodiak, and Dutch Harbor, and others. The numbers of vessels that come from Alaska is 1,120; the number from the Seattle area is 399 and the number from other areas is 256.

The total number of catcher vessels (harvesting only) and catcher/processor vessels (harvesting/processing) is 1,582 and 167, respectively. Most catcher vessels employ three types of gear: hook-and-line (longline), trawls, or pots. The predominant gear type is hook-and-line (Table 1.3). Hook-and-line vessels are the generally small vessels in the fleet, having average capacities of 27 net tons and average lengths of 45 feet.

Most catcher/processor vessels also employ hook-and-line, trawls, or pots. The predominant gear type is hook-and-line gear (Table 1.4). They are the smallest of the catcher/processor vessels, having average capacities equal to 61 net tons and average lengths of 56 feet, but are larger than the catcher vessels using hook-and-line gear.

The next most numerous catcher/processor vessel are trawl vessels, which number 55 vessels and have average capacities of 375 net tons and average lengths of 148 feet. Pot vessels number 9 and have capacities of 428 net tons and average lengths of 143 feet. Other catcher/processor vessels that may have combinations of other gear may exist but have not registered with NMFS as of April 16, 1988 to be found in the data base.

Table 1.1--Numbers of groundfish vessels that are less than 5 net tons or 5 net tons and larger that are Federally permitted in 1988 to fish off Alaska.

	Number of Vessels		
	Less than 5 net tons	Over 5 net tons	Total
HARVESTING ONLY	90	1,167	1,257
HARVESTING/PROCESSING	8	136	144
PROCESSING ONLY	0	3	3
SUPPORT ONLY	0	17	17
Total vessels	98	1,323	1,421

Table 1.2--Numbers of groundfish vessels Federally permitted to fish off Alaska in 1988 from the Seattle area, Alaska, and other areas.

	Number of Vessels			
Mode	Seattle Area	Alaska	Other Areas	Total
HARVESTING ONLY	256	824	177	1,257
HARVESTING/PROCESSING	58	70	16	144
PROCESSING ONLY	3	0	0	3
SUPPORT ONLY	7	2	8	17
Total	324	896	201	1,421

Table 1.3--Numbers and statistics of catcher vessels by gear type that are Federally permitted to fish off Alaska.

	Number	Ave Net Tons	Ave Length (ft)
HOOK-AND-LINE	1,017	27	45
POTS	13	122	88
TRAWL	214	122	91
OTHER GEAR 1/	13	18	38
TOTAL	1,257		

1/ Other gear includes combinations of hook-and-line, pots, trawls, jigs, troll gear, and gillnets.

Table 1.4--Numbers and statistics of catcher/processor vessels by gear type that are Federally permitted to fish off Alaska.

	Number	Ave Net Tons	Ave Length (ft)
HOOK-AND-LINE	86	51	59
POTS	9	428	143
TRAWL	49	374	146
OTHER GEAR 1/	0	N/A	N/A
TOTAL	144		

1/ Other gear includes combinations of hook-and-line, pots, trawls, jigs, troll gear, and gillnets.

2.0 FEDERAL PERMIT REQUIREMENTS

2.1 Description of and Need for the Action

Under regulations implementing the FMPs for Groundfish of the Gulf of Alaska and for the Bering Sea and Aleutian Islands area, vessels that are fishing in (i.e., harvesting and/or processing) the Exclusive Economic Zone (EEZ) are required to have Federal permits. Those vessels that have Federal permits are then subject to Federal regulations. Such regulations, in part, require catcher/processor vessels and mothership processor vessels to submit hail weight reports of groundfish caught and processed at sea. Regulations also require all catcher vessels, including catcher/processor vessels, to submit fish ticket reports of groundfish catches to the Alaska Department of Fish and Game. NMFS uses these reports for determining the progress of ongoing fisheries, closing fisheries when harvest quotas are reached, and for making reapportionments of surplus groundfish to joint venture processing (JVP), and to total allowable level of foreign fishing (TALFF).

If vessels are not fishing in the EEZ, they are not required to have Federal permits. Thus, they are not required under Federal regulations to submit hail weight reports to NMFS or to submit catch reports to ADF&G, even though they may be processing catch taken from the EEZ. Such vessels may be operating in the 0-3 mile Territorial Sea, in the internal waters of the State of Alaska, or seaward of the EEZ, i.e, beyond 200 miles.

This reporting/permit loophole is caused by wording in current regulations at 50 CFR Parts 672 and 675 for the Gulf of Alaska and Bering Sea/Aleutian Islands, respectively. Sections 672.4 and 675.4 of the regulations read:

> "No vessel of the United States may fish for groundfish in the Gulf of Alaska [Bering Sea and Aleutian Islands Area] without first obtaining a permit issued under this part".

Since the definitions in Section 672.2 for the Gulf of Alaska and 675.2 for the Bering Sea and Aleutians Islands refer to management areas that exclude those waters outside of the EEZ, vessels outside the EEZ are not required to have Federal permits. Thus, they can receive EEZ-caught groundfish and not report them to NMFS. These regulations are based on the Gulf of Alaska and Bering Sea/Aleutians Islands Area FMPs at Chapters 4.3.1.1. and 14.4.1., respectively. Since the text in both FMPs explicitly supports the regulations, changes to regulations require FMP amendments.

This reporting/permit loophole presents an opportunity for vessels that are not currently required to have Federal permits to avoid the weekly reporting requirements imposed on all U.S. processing vessels operating within the EEZ. In 1987, six vessels were in this category. They received and processed approximately 41,280 mt of EEZ-caught groundfish. Although the catches were eventually reported to ADF&G via fish tickets, NMFS received the information at intervals that were much later than would have occurred had the vessels also submitted weekly hail weight reports to NMFS. One or more such vessels could cause inseason management problems, especially if they received amounts of EEZ-caught groundfish that were large relative to the size of the quota. Information on such catches could be important to NMFS for inseason management actions, such as time/area closures and reapportionments of surplus groundfish among user groups. Under the present management regime contained in the two FMPs, NMFS is responsible for conducting orderly fisheries with the objective of allowing fair starts and finishes for each of the fisheries such that fishermen are allowed equal opportunities to harvest the available quotas.

2.2 The Alternatives

Alternatives considered by Amendments 12 and 17 include, (1) maintaining the status quo, (i.e., maintain current regulations), and (2) the proposed action, which would require all U.S. vessels receiving groundfish caught in the EEZ to have a Federal permit.

2.2.1 Alternative 1: Status quo.

Under this alternative, only those U.S. vessels that are fishing in the EEZ would be required to have a Federal permit. This alternative does not resolve potential management problems identified above.

2.2.2 Alternative 2 (Preferred): Proposed action.

All vessels of the United States receiving EEZ-caught fish would have to hold a Federal permit and thus would have to comply with weekly reporting requirements.

2.3 Biological and Physical Impacts

Both the status quo and the proposed alternative could have some impact on the environment. Requiring vessels to have Federal permits will, in turn, require vessels to report catches from the EEZ. NMFS uses catch reports for obtaining information on total fishing mortality, which is used to assess condition of groundfish stocks. Information is also obtained for managing groundfish stocks inseason to avoid overharvesting quotas, thereby lessening the risk of overfishing and optimize utilization of the resource. Such information is especially important when the available quotas are numerically small and/or they are harvested in a short time period. For example, if a large U.S. vessel located outside the EEZ was engaged in processing EEZ-caught sablefish, but did not submit reports to NMFS, NMFS might underestimate the actual harvest and allow the fishery to continue too long. The actual harvest would be the sum of the reported and unreported sablefish harvests. In this example, a sablefish quota could be overharvested, which would increase the risk of overfishing and reduce the long-term productivity and economic yield of the resource.

2.3.1 Alternative 1: Status quo.

Under this alternative, a groundfish species could be overharvested. To the extent that overharvesting the groundfish resource increases the risk of overfishing which reduces the long-term productivity of the resource, a cost is incurred under this alternative.

2.3.2 Alternative 2 (Preferred): Proposed action.

Under this alternative, the reporting loophole would be closed. U.S. processor vessels that locate outside the EEZ but which process groundfish that were caught in the EEZ would be required to be Federally permitted. They would, therefore be required to report amounts of groundfish being received for processing. To the extent that the risk of overfishing is decreased through proper management, resulting from timely and comprehensive harvest information, a benefit accrues under this alternative. This benefit is attributable to maintenance of the long-term productivity of the resource.

2.4 Socioeconomic Impacts

2.4.1 Alternative 1: Status quo.

Under this alternative, the potential exists for non-Federally permitted U.S. vessels to locate outside the EEZ, receive and process fish which were caught inside the EEZ, and not submit weekly catch reports to NMFS or fish tickets to ADF&G. Historically, few vessels have fallen into this category. However, if even a single vessel were to operate in this manner, efficient and timely management of some groundfish stocks could be jeopardized, given the large processing and holding capacity of some U.S. catcher/processors and mothership vessels.

Fishery Costs and Benefits

In some circumstances, if even a single vessel did not report weekly receipts of catches, NMFS might not obtain adequate harvest information for necessary inseason management actions. Section 2.1 presents an example of six such vessels which, in 1987, did not report to NMFS, in a timely way, 41,280 mt of groundfish received for processing. NMFS currently lists 147 catcher/processors and mothership processors in its permits data base. All could potentially operate, for some period of time, outside of the EEZ, receiving catches made within the EEZ. Under the status quo alternative, these vessels would not be required to report receipt of catches to NMFS, in a timely way. The result could be that NMFS would inadvertently allow an overharvest of the resource for lack of complete landings information.

The immediate effect of failure to take an inseason action to prevent overharvesting might be a short-term increase in gross fishing revenues to some vessels. However, these transient increases must be weighed against the long-term adverse effects resulting from a reduction in physical and economic productivity of the resource, and the consequential inefficiencies which would be imposed on the U.S. fishing industry. To the extent that TACs are set, using the best available scientific information, at levels which maximize the net social benefit attainable from the resource, any departure from the optimum TAC harvest level imposes costs in terms of a net social welfare loss. That is, if overfishing causes harm to the resource, fishermen, processors, and consumers could be forced to forego benefits in the future that otherwise could have been realized.

Reporting Costs

No additional reporting costs would be incurred as a result of maintenance of the status quo.

2.4.2 Alternative 2 (Preferred): Proposed action.

Under this alternative, NMFS would have more complete and timely information upon which to base its inseason management decisions.

Fishery Costs and Benefits

If all U.S. processing vessels receiving fish from the EEZ complied with a requirement to provide weekly groundfish catch reports, NMFS would have the data upon which to make efficient decisions regarding optimum inseason management of the numerous U.S. groundfish fisheries. This would reduce the likelihood that the TAC would be inadvertently exceeded, which, in turn, would diminish the risk of overfishing, and thus result in a net benefit to the nation. While some individual vessels could realize a short-term reduction in total gross operating revenues from the fishery as landings are constrained to TAC limits, the aggregate long-term benefits to the fishing industry and the nation deriving from sustained optimum productivity of the resource will exceed any short-term losses. That is, to the extent that

OYs, by definition, reflect long-term optima, and TACs deriving from OYs are benefit maximizing harvest levels, then departure from TAC levels are suboptimum and result in net costs to the nation.

Reporting Costs

There is no cost to the U.S. operator to obtain a Federal permit, except that associated with completing and submitting a simple application form. Some additional reporting costs may be imposed upon U.S. processing vessels operating outside the EEZ, and receiving fish captured within the EEZ, under the proposed amendment, although no estimate of these additional costs can be made, a priori. In 1987, for example, only six vessels from the U.S. processing fleet operated in a manner which would have been affected by the proposed action. Had this alternative been in place in that year, thus requiring all U.S. processors including these six particular vessels, to supply weekly hail weight reports of fish received from the EEZ, the attributable increase in reporting cost would have been negligible.

It has been suggested that, on average, the cost of transmitting a ship-to-shore hail weight report, such as would be required under the proposed action, would be approximately $2.50.

Assuming 40 weeks of processing activity per fishing year, the total cost of complying with the weekly reporting requirement would be approximately $100 per vessel per year. This assumes that the necessary landings information which comprises the required weekly report is routinely collected by each processor in the normal course of operation.

NMFS has documented 33 catcher/processors and three mothership processing vessels that are operating off Alaska in 1988. In the limit, if all 36 vessels chose to operate outside the EEZ, while receiving catches from within the EEZ, the increase in total reporting costs associated with adoption of Alternative 2 would be on the order of $3,600 per year for the entire fleet. The actual cost will be significantly smaller than this worst-case estimate, however, but will depend upon the number of U.S. vessels actually operating outside the EEZ, and the duration of their processing activities there.

3.0 PROHIBITED SPECIES CATCH LIMITS FOR FULLY-UTILIZED GROUNDFISH

3.1 Description of and Need for Action

When the Bering Sea and Aleutian Islands (BSAI) groundfish FMP was being developed, the principal management concerns were to prevent groundfish harvests from exceeding the total allowable catches (TACs) and to control the incidental harvest or bycatch of prohibited species (i.e., salmon, crabs, and halibut). This is reflected in the fact that the FMP makes no provision for controlling the bycatch of groundfish species in directed fisheries for other groundfish species. Original FMP implementing regulations required all fishing for groundfish to cease if the fishery could catch a groundfish species for which the TAC was fully harvested. Hence, in addition to preventing fishing for a species for which the current TAC had been taken, fishing was also prohibited that might take incidental catches of the species for which the TAC had been reached.

This problem was partially corrected with the implementation of a regulatory amendment in 1987 commonly known as the single species rule (published April 14, 1987 at 52 FR 11992). This rule provided authority to the Secretary of Commerce (Secretary) to (1) slow the harvest rate of any species of groundfish as total catch approached TAC by prohibiting directed fishing for that species, and (2) prohibit retention of any species of groundfish for which the TAC had been reached. The overall intent of this rule was to maintain fisheries for groundfish species for which the TAC had not been reached despite the bycatch of groundfish species for which the TAC had been (or soon would be) reached, providing that overfishing of the bycatch species would not occur.

This rule has worked well to prevent or delay the premature closure of directed fishing on a groundfish species due to the fully harvested TAC of another groundfish species. However, it fails to resolve two related conservation and management problems. The first is that the single species rule places no limit on the amount of a species discarded after its retention is prohibited because its TAC has been fully harvested. The second problem is that the single species rule does not apply to foreign fishing.

The first problem concerns the biological conservation of BSAI groundfish resources. The harvest limit, represented by the TAC for each species, is the primary control preventing excessive fishing mortality and ultimately overfishing. When the catch of a species approaches its TAC, the single species rule allows the Secretary to prohibit further directed fishing for that species. This means that a fisherman may retain bycatches of that species, provided that such bycatches are less than 20 percent of his total fish catch or harvest at any time, and that they amount to less than 20 percent of the total amount of fish or fish products onboard the vessel. Such retained bycatches are counted against the remaining TAC for that species. However, when the catch of a species reaches its TAC, under the single species rule, any further bycatches of it may not be retained and must be treated in the same manner as a prohibited species. Although the resulting discard of further bycatches of this species contributes to its total fishing mortality, the amount of additional fishing mortality from this source is not counted against or controlled by any quota or limit, and would be restrained only when a determination is made that further fishing mortality would result in overfishing.

Initially, fishing mortality resulting from bycatch discard was an insignificant part of the total fishing mortality for any groundfish species. This would remain true if directed fishing for, and retainable bycatches of, most groundfish species continued for all or most of the fishing year. The character of BSAI groundfish fisheries is rapidly changing, however, with persistent increase in domestic fishing effort. This increasing fishing effort is translating into shorter periods of allowable directed fishing for key species. Decreased time for directed fishing on a

species means increased time during which it will be caught as a bycatch before and after its TAC is reached.

This trend began in 1986 when the single species rule was first implemented on an emergency basis. In 1986, JVP fishing for pollock in the Bering Sea subarea remained open for the entire fishing year (January 1 through December 31). In 1987, JVP directed fishing for pollock was allowed initially for 156 days (January 1 through June 6) and then subsequently for 26 days (September 8 through October 3) for a total of 182 days. The JVP fishery for yellowfin sole followed a similar course. It remained open for the entire fishing year in 1986 but in 1987 was open for only 179 days. Domestic fishing (JVP and DAP) for sablefish in the Bering Sea subarea remained open 246 days in 1985 but only 190 days in 1986. Although directed fishing for sablefish in 1987 lasted longer (226 days) than in 1986, retention of sablefish bycatches was allowed for only an additional 93 days August 15 to November 16. Bycatches of sablefish for the remaining 45 days of the 1987 fishing year were required to be treated in the same manner as prohibited species (i.e., discarded). Generally, key species' TACs will be taken more quickly than species of less demand.

This trend toward decreasing periods of allowable directed fishing is likely to continue as fishing effort increases for most species. The resulting increase in bycatch discard is likely to be a significant portion of the total fishing mortality for many groundfish species. If it remains unlimited, the bycatch discard rate could lead to excessive fishing mortality and increase the risk of overfishing.

The second problem concerns the management of allocations among domestic and foreign fisheries. Any allocation of BSAI area groundfish to foreign directed fishing must also include an allocation of species that are taken as bycatch. In short, without a bycatch allocation, a foreign directed fishing allocation may not be harvested. Because the single species rule does not apply to foreign fisheries, a foreign fishery cannot retain or discard bycatches of groundfish without accounting for such catches against an allocation for each species caught. For example, Japanese directed fishing for Pacific cod with longline gear also catches small amounts of virtually all other groundfish species with the possible exception of Atka mackerel. The TACs of most of these other species of groundfish, however, can be fully harvested by domestic (DAP and JVP) fisheries. The Magnuson Act provides for preferential access to the groundfish optimum yield (OY) by domestic fishermen. Foreign fisheries may be allocated only amounts of the OY that are surplus to domestic fishery needs. Therefore, if no amounts of the OY of species needed as bycatch are surplus to expected domestic harvests, then the Japanese fishery, in this example, would be required to forego its allocation of Pacific cod.

Of course, a groundfish resource left unharvested by foreign fisheries may not appear to be a problem. However, the Magnuson Act specifically provides for foreign fishing of that portion of the optimum yield that is surplus to domestic needs. A relevant policy question is whether a foreign nation must forego a specified allocation of a target species due to the lack of an allocation of bycatch species. For example, if the Council recommends and the Secretary approves a specific allocation of a groundfish species to a foreign nation, does that allocation imply an opportunity for that nation to harvest the allocated species regardless of reasonably expected bycatches of other species of groundfish?

A similar policy question exists with respect to a specification of groundfish for JVP. The processor preference amendments to the Magnuson Act provide for DAP priority access to allowable harvests of groundfish. This has been interpreted to mean that the specified DAP for any species is not a limit on DAP harvests if there is an unharvested amount of that species specified for JVP. The practical effect of this is similar to the foreign fishing problem in that specified amounts of a species necessary for JVP bycatches may be taken instead by DAP fisheries. Unlike the foreign fisheries, however, this event does not cause the elimination of

directed fishing by JVP fishermen for a different species, but it does require the discard of the JVP bycatch species for which the specified JVP apportionment has been, or will be, fully harvested by DAP fishermen. A relevant policy question, therefore, is whether this source of fishing mortality (i.e., discard of JVP bycatch species which are fully harvested by DAP fisheries) should be unlimited as it is now, prohibited as it is with foreign fisheries, or reasonably limited to allow harvest of a directed fishing apportionment while preventing overfishing of the bycatch species.

3.2 The Alternatives

3.2.1 Alternative 1: Do nothing (the status quo).

Under this alternative, no changes would be made to the FMP to provide limits on groundfish bycatches. This alternative does nothing to resolve the two problems described above which are expected to become more severe as fishing effort grows. No changes in Council procedures in establishing annual harvest specifications would be required under this alternative.

3.2.2 Alternative 2: Provide for non-retainable catch limits that are not within the OY for groundfish species.

Under this alternative, Section 14.3 of the FMP would be amended to require the annual specification of a conservation margin as a portion of the ABC for each groundfish species prior to and separate from the specification of TAC for each species. Non-retainable catch limits would then be provided from this conservation margin. These limits would be imposed after achievement of a species TAC on fishing that results in significant bycatches of that species. A non-retainable catch limit would be the maximum amount that may be harvested as bycatch in directed fisheries for other groundfish species but that cannot be retained and must be treated in the same manner as prohibited species. Any inseason increase in a non-retainable catch limit for any species could only occur after published findings by the Regional Director that such increase would not cause overfishing of the species. Non-retainable catch limits would be apportioned among DAP, JVP and foreign fisheries according to the relative distribution of TAC among these fisheries.

This alternative resolves the conservation problem by providing for a specific limit on non-retainable fish catches in the same way that specification of TAC limits retainable catches. A control is provided under this alternative that prevents inadvertent overfishing due to unlimited incidental catches of groundfish for which the TAC has been achieved. This alternative also resolves the second problem of management allocation by deriving non-retainable catch limits from the conservation margin which is outside of the TAC, and subsequently the OY. This provides assurance that a specific allocation, for non-retainable bycatch purposes only, will be available regardless of DAP priority to allocations of retainable groundfish.

To implement Alternative 2, non-retainable catch limits would be established from a conservation margin annually specified for all species of groundfish by the Council concurrent with its specification of TACs. Ordinarily, a non-retainable catch limit for any species would not exceed its conservation margin which, when added to the TAC for that species, would be equal to or less than its ABC. In effect, therefore, the ABC for any species becomes the ultimate allowable level of fishing mortality for that species. Exceeding this amount of fishing mortality in any fishing year could occur under existing inseason management authority provided that the Regional Director determined that doing so would not cause significant risk of overfishing.

In practice, the conservation margin would be a certain percentage of the ABC of each species. The TAC for each species could not be greater than the ABC minus the margin. Species TACs

could be less than this maximum for socio-economic or other biological reasons. Non-retainable catch limits would then be established inseason as needed by the Regional Director from the conservation margin. The amount of any limit for a particular species would be determined by the Regional Director based on past and present bycatch rates of the species, the number of target fisheries in which the species is likely to be a bycatch, the kind of fishing gear used, seasons and areas fished by these target fisheries, the remaining time in the fishing year, and any other pertinent information. A non-retainable catch limit for a species determined by the Regional Director would be announced in the Federal Register concurrent with the notice that further retention of the species is prohibited. If the current TAC for that species is distributed among DAP, JVP and foreign fisheries, then the non-retainable catch limit would be proportionately distributed. Achievement of a non-retainable catch limit for any species would trigger the closure of all directed fishing in areas where bycatches of that species can be anticipated.

Implementation of this alternative would depend on accurate and complete reporting of all groundfish bycatches subject to a non-retainable catch limit. Observers onboard DAP vessels collecting bycatch data, as is currently done on foreign fishing vessels, might be necessary to effectively implement Alternative 2.

3.2.3 Alternative 3 (Preferred): Provide for prohibited species catch (PSC) limits for groundfish incidentally caught in JVP and foreign target fisheries.

This alternative is essentially the same as Alternative 2 except for certain nomenclature and procedural differences, and that it would not apply to DAP fisheries. Following the example of the Gulf of Alaska Groundfish FMP, the catch limits would be known as PSC limits and they would be established preseason concurrent with TACs and apportionments instead of inseason from a conservation margin. The effectiveness of this alternative in resolving the two problems described above is diminished by the exclusion of DAP fisheries; however, this alternative can be implemented under the current observer program. Alternative 3 would be implemented in the same manner as Alternative 2 except that the conservation margin could be smaller since non-retainable catch limits would not be applicable to DAP fisheries. This alternative would be more effective than Alternative 1, at least until all groundfish species were harvested entirely by DAP fisheries.

Alternative 3 would be implemented in the same manner as PSC limits for groundfish currently are implemented under the Gulf of Alaska FMP except that "fully utilized groundfish species" would be construed as those species for which the TACs can be harvested completely by domestic fishermen in both DAP and JVP fisheries. In practice, PSC limits would be specified when the TAC is specified for a fishing year and apportioned among DAP, JVP, and foreign fishing. Specified PSC limits for JVP and foreign fisheries would be based on estimates of likely bycatches that necessarily occur while conducting directed fishing for other groundfish species. Therefore, the amount of a PSC limit for any particular groundfish species would be directly related to the amount of groundfish apportioned to JVP and TALFF for directed fishing. For example, an apportionment of groundfish species "A" to JVP may require specification of JVP PSC limits for groundfish species "B," "C," and "D" but the amounts of these species in the PSC limits will depend on the amount of species "A" apportioned to JVP.

Amounts of groundfish assigned to PSC limits would be considered outside of the OY and therefore not retainable. As such, PSC limits for JVP and TALFF would be immune to harvesting by DAP fisheries under the processor preference amendments to the Magnuson Act and uncaught PSC limits would not be reassigned to the TAC in the current or succeeding years. In the event that a JVP or foreign PSC limit is required for a species for which the TAC would equal the ABC, and in the event that the JVP or foreign fishery is desired, then the Council could recommend one of two options. First, the TAC could be reduced to

accommodate the PSC limit without exceeding the ABC. Second, the TAC could remain equal to ABC with any PSC limit being in addition to ABC. The second option would only be possible if it were determined by the Regional Director that the additional PSC limit would not lead to overfishing. As exercised under the Gulf of Alaska FMP, the practice of the Council has been to choose the first option to assure that overfishing does not occur.

Provision is made, however, for inseason adjustment of a PSC limit that becomes too low due to reapportionments of groundfish to JVP or TALFF, unanticipated harvest rates, or specifications based on erroneous information. Inseason adjustment of a PSC limit may result in the sum of the PSC limit and TAC for a species exceeding its ABC, unless the adjustment would lead to overfishing of the species.

3.3 Biological and Physical Impacts

The effects of any alternative on the biological and physical environment of BSAI area groundfish depend on the relative degree to which unlimited amounts of non-retainable bycatch affects the risk of any groundfish species being overfished. Low or high exploitation rates which produce low or high risks of overfishing a species would result in respectively larger or smaller numbers of that species remaining in the ecosystem than would otherwise occur. More or less of a species in the ecosystem will affect predator/prey relations by providing more or less predation for lower organisms and prey for higher organisms in the food chain including marine mammals and birds. These predator/prey relationships could change depending on the magnitude of the increase or decrease in the abundance of the groundfish species and the importance of it as a predator and prey species. However, actual impacts on the ecosystem caused by implementing any alternative probably would be immeasurable against natural variations in the ecosystem.

Regardless of measurable perturbations on the ecosystem, unlimited fishing mortality of incidentally caught groundfish could risk their being overfished. The extent to which a groundfish species is at risk of being overfished depends on (1) the rate at which it is incidentally caught in directed fisheries for other groundfish species, and (2) at what point in the fishing year its TAC is reached and further catches must be discarded. This analysis does not attempt an impact assessment of every possible combination of bycatches in all directed fisheries. Instead, hypothetical but realistic examples illustrate the potential effect of each alternative.

In each of the following examples, assume the following:

(1) The TAC and ABC for yellowfin sole is 250,000 mt,

(2) The TAC for Pacific cod is 200,000 mt,

(3) The bycatch rate of yellowfin sole in the directed trawl fishery for Pacific cod is 30 percent by weight of the Pacific cod catch during the last half of the fishing year, and

(4) Reapportionments from the non-specific reserve to the yellowfin sole TAC do not occur because they would exceed the yellowfin sole ABC.

3.3.1 Alternative 1: Status quo.

As a first example, assume that the yellowfin sole TAC is reached on June 30 and the TAC for Pacific cod continues to be available throughout the fishing year. Under the single species rule, fishing for Pacific cod may continue but incidental catches of yellowfin sole must be

treated in the same manner as prohibited species (i.e., discarded). Further, assume that only 30 percent of the TAC for Pacific cod has been taken by June 30. The potential bycatch and discard of yellowfin sole in the directed fishery for Pacific cod during the remaining six months therefore is 70 percent of 200,000 mt times 30 percent, or 42,000 mt of yellowfin sole. This amount of yellowfin sole in addition to that which was retained as TAC (250,000 mt) sums to 292,000 mt of total yellowfin sole fishing mortality. This mortality would exceed the yellowfin sole ABC by 42,000 mt or 17 percent.

In a second example, assume that prohibition of directed fishing for yellowfin sole under the single species rule effectively slows its rate of retainable harvest such that achievement of its TAC is delayed to September 30. Again, the TAC for Pacific cod continues to be available throughout the fishing year but 80 percent of it has been taken by September 30. The potential bycatch and discard of yellowfin sole in the directed fishery for Pacific cod is calculated as in the first example to be 12,000 mt (.30 (.20 x 200,000)). This amount of yellowfin sole in addition to that which was retained as TAC sums to 262,000 mt, which would be 5 percent in excess of the yellowfin sole ABC.

Although a definite determination that overfishing of yellowfin sole in either of these examples may not be possible, it is reasonable to assume that fishing mortality in excess of the ABC increases the risk of overfishing. Further, successive years of fishing mortality in excess of the ABC plus the bycatch and discard of yellowfin sole in multiple directed fisheries for other groundfish species will substantially increase the risk of overfishing. This risk is compounded when the ABCs for yellowfin sole in future years are reduced to account for previous years' excesses. This implies that TACs for yellowfin sole also will be reduced and that discarded amounts in excess of its ABC will increase. Under an assumption of constant recruitment to the exploitable yellowfin sole population, both of the above examples suggest (to differing degrees) scenarios of decreasing yellowfin sole ABCs with increasing risk of overfishing. These scenarios would be mitigated only by years of good recruitment but, conversely, would be exacerbated by years of poor recruitment.

The risk of overfishing a groundfish species due to its unlimited bycatch and discard in the directed fisheries for other groundfish species could range widely depending on certain variables. For example, the bycatch of sablefish in a directed fishery for pollock on the upper shelf may be minor but the bycatch of yellowfin sole and other flatfish in a directed trawl fishery for Pacific cod in the same area may be substantial. Negative biological effects of this alternative (status quo) may be mitigated by the use of area closures and gear restrictions. However, the highly variable nature of groundfish species and the groundfish fishery prevents any certainty that acceptably low levels of overfishing risk can be maintained as fishing seasons become shorter in response to increasing fishing effort.

In addition, if other means of controlling bycatch discards are not effective, then some biological degradation of discard waste may occur. The biological effects of the nutrients in such waste are expected to be highly localized and immeasurable in the Bering Sea ecosystem as a whole. Physical impacts on the environment also are impossible to predict but are expected to be inconsequential given the naturally variable and turbulent characteristics of this ecosystem.

3.3.2 Alternative 2: Provide for non-retainable catch limits.

The biological effects of this alternative would involve less risk of overfishing compared to the status quo due to specified limits on the amount of groundfish bycatch discarded in directed fisheries for other groundfish species. The Council would annually provide specifications of these limits so that the total fishing mortality of any groundfish species would not exceed its

ABC. The only exception would be when the Regional Director finds that exceeding the ABC of a species within certain constraints will not lead to overfishing.

Illustration of how this alternative would work can be based on the same examples used above. If the TAC for yellowfin sole is anticipated to be reached early in the fishing year (based on previous years' experience) as in the first example, the Council would specify, for example, 5 percent of the yellowfin sole ABC as a conservation margin. The maximum TAC for this species then becomes 250,000 mt minus (.05 x 250,000) or 237,500 mt. When this TAC is achieved and further retainable catches of yellowfin sole are prohibited, the Regional Director will determine how much of the 12,500 mt conservation margin needs to be used to accommodate continued bycatches of this species in the directed trawl fisheries for Pacific cod and other species. The Regional Director may specify any part or all of the conservation margin as a non-retainable catch limit and apportion that limit among DAP, JVP and foreign fisheries. This limit would be smaller if achievement of the TAC is anticipated later in the fishing year as in the second example. In either case, fishing for Pacific cod, or any fishing with substantial bycatches of yellowfin sole, would be closed if the non-retainable catch limit for yellowfin sole were reached before the end of the fishing year. Exceptions to such a closure could be made under conditions of gear or area restrictions and for fishing which has insignificant bycatches.

Risk of overfishing a groundfish species from uncontrolled discard of it as a bycatch would be substantially reduced under this alternative relative to Alternative 1. Waste would be reduced as a result of the strong incentive to avoid high bycatch rates of species required to be discarded. To the extent that overall discard of groundfish is reduced by this alternative, the return of nutrients to the sea also would be reduced. In addition, the physical effects of fishing gear on the sea bottom also would be decreased under this alternative if it increased the length and frequency of fishery closures. However, these physical effects probably would not be distinguished against the natural variability of the ecosystem.

3.3.3 Alternative 3 (Preferred): Provide for prohibited species catch (PSC) limits for groundfish caught incidentally in JVP and foreign target fisheries.

The biological risk of overfishing is less under this alternative than under Alternative 1 but more than under Alternative 2. Although current JVP and foreign fisheries account for the dominant portion of groundfish harvest, the DAP portion is growing and rapidly replacing foreign and JVP access to groundfish resources under the domestic priority provisions of the Magnuson Act. In 1987, the DAP groundfish harvest off Alaska (BSAI and Gulf of Alaska areas combined) amounted to about 400,000 mt or about 28 percent of the total 1,840,000 mt groundfish harvest. However, DAP groundfish harvests increased by about 168 percent from 1986 to 1987. Assuming a more conservative rate of 100 percent increase in DAP harvests for the next several years, the DAP groundfish harvests could exceed the current total TACs of all groundfish species off Alaska by 1990. With an even slower rate of growth in DAP groundfish fisheries, it is highly likely that groundfish harvests off Alaska will be mostly domestically processed within five years. Hence, excluding DAP fisheries from non-retainable catch limits will result in rapidly decreasing effectiveness in the control of discard wastage. Currently, the biological and physical effects of Alternative 3 would be similar to Alternative 2 but within five years these effects would become increasingly and ultimately similar to Alternative 1 (status quo).

3.4 Socioeconomic Impacts

3.4.1 Fishery Costs and Benefits

It is impossible to precisely predict the behavior of the groundfish fisheries with respect to groundfish bycatches in the BSAI area due to several unknown and highly variable factors. Among these are future market values and opportunities for different species of groundfish. A high value for rock sole may attract increased fishing effort which may cause increased bycatches of pollock and Pacific cod, but similar increased effort on sablefish may not cause significant bycatches of any other species. Markets also may affect the timing of fishing effort which will affect bycatch rates. For example, the JVP fishery for pollock at depths of less than 100 fathoms in 1986 took virtually no Atka mackerel as bycatch in the winter but the bycatch rate of this species in the summer was over 13 percent of the pollock catch. Changes in fishing technology and locations also will significantly affect bycatch rates.

Nevertheless, certain basic trends appear reasonably clear for qualitative analysis. First, DAP groundfish fisheries are growing rapidly and probably will harvest virtually all groundfish species TACs within several years. Second, as JVP and foreign fisheries are phased out over this time, specific allocations of certain species for bycatch purposes, that are within the TAC and surplus to DAP requirements, will be increasingly difficult to make. This will jeopardize the harvest of these specific allocations by JVP and foreign fisheries which may also detrimentally affect domestic fishermen and business arrangements dependent on these harvests, at least in the short term. Foreign fisheries will not be allowed for allocated target species without also having specific allocations of bycatch species. Although JVP fisheries are not similarly restricted, the foreign processing partners would be required to discard bycatches of species for which no JVP apportionment exists. Without limit in the long term, discarding could be biologically and economically detrimental.

Finally, and most importantly, open fishing seasons for the species most in demand will become shorter as fishing effort increases, assuming continuation of open-access and quota-based management of the BSAI groundfish fisheries. This will result in longer periods during which some bycatch species will be required to be discarded in the same manner as prohibited species. Again, without limit, such discarding is anticipated to result in fishing mortality that substantially exceeds the ABCs for some species which could result in an unacceptably high risk of overfishing for these species.

Generally, the costs of not providing a control or limit on the discard of non-retainable bycatches (Alternative 1) are those associated with potential long-term overharvesting of some groundfish species which will result in future years' TACs that are less than they would have been if the overharvesting had not occurred. In this instance, overharvesting means harvesting a species in excess of its ABC which may or may not lead to overfishing as defined in the National Standard guidelines. It may be reasonably assumed that overharvesting over time will reduce future harvest potential and increase the risk of overfishing. The benefit of Alternative 1 generally would be increased short term revenues to the fishery from unrestricted access to harvest the entire TAC of all target species even when doing so will cause the overharvest of other groundfish species taken as bycatch.

Conversely, the costs of providing non-retainable catch limits (Alternative 2 and, to a limited extent, Alternative 3) are those associated with the occasional closure of directed fishing for a groundfish species in a particular area before its TAC is reached because a non-retainable catch limit for another groundfish bycatch species is reached. Also, using the yellowfin sole/Pacific cod example developed above, non-retainable catch limits could reduce the TAC for yellowfin sole by 12,500 mt to provide expected bycatch in the cod fishery; that amount of harvest and accompanying revenue would be removed from the yellowfin sole target fishery.

The benefits of non-retainable catch limits generally are long-term conservation of groundfish species and the assurance to JVP and foreign fisheries that DAP priority would not restrict the reasonable prosecution of JVP and foreign allocations.

A more refined estimate of costs and benefits would ideally examine the marginal losses and gains of non-retainable catch limits or PSC limits quantitatively in terms of current dollars. Without the information necessary for such analysis, description of the marginal aspects must suffice. First, since discard of groundfish bycatches would not be prohibited, the assumed economic benefit of higher future harvests under Alternative 2 results from the difference between the amount of groundfish bycatch discarded without limit and that discarded with the limit. For some species this difference and resulting marginal benefit will be larger than for other species. Second, part of the effect of Alternative 2 would be a stronger incentive than currently exists for fishermen to avoid high bycatches of groundfish for which there is a non-retainable catch limit. Some marginal cost may accrue to fishermen who change their fishing strategy or location to avoid high groundfish bycatches. Third, Alternative 2 is not intended to make it impossible to achieve the TACs of all target groundfish species.

It may be assumed that care would be taken in specifying non-retainable catch limits that are truly effective in limiting discards while not being excessively costly to the fishery in terms of lost fishing time. It is anticipated that non-retainable catch limits may not be specified for all groundfish species and that specified limits will balance the short-term economic factors facing the fishery with the long-term conservation benefits to the groundfish resource. Moreover, certain discretionary provisions are intended to allow the Secretary to continue allowing discards above a non-retainable catch limit if doing so has significant economic urgency and would not cause an excessive risk of overfishing the bycatch species. The interaction of these factors inevitably will affect the marginal costs and benefits of a non-retainable catch limit over time in varying and unknown ways.

Conversely, the costs of providing non-retainable or prohibited species catch limits (Alternative 2 and to a limited extent, Alternative 3) are those associated with the occasional closure of directed fishing for a groundfish species in a particular area before its TAC is reached because a non-retainable catch limit for another groundfish bycatch species is reached. The benefits of non-retainable catch limits generally are long-term conservation of groundfish species and the assurance to JVP and foreign fisheries that DAP use of bycatch allocations will not limit directed fishing operations.

Fishery costs and benefits under Alternative 3 would be less than under Alternative 2 since Alternative 3 would apply such limits only to JVP and foreign fisheries. From the foreign fishery perspective, either alternative would provide the benefit of potential access to groundfish species for which there is surplus TAC regardless of whether there is also surplus TAC of all bycatch groundfish. The marginal cost of this benefit is zero relative to the status quo under which foreign fisheries would be denied access to surplus amounts of a single species if surplus amounts of bycatch species were not also available. From the JVP perspective, the cost of potential prohibition of fishing due to attainment of a non-retainable catch limit is weighed against the long term conservation benefits described above.

3.4.2 Reporting Costs

No change in reporting or paperwork costs are indicated under any of the alternatives. Onboard observers monitoring the catches of foreign and JVP catches already routinely collect bycatch data. Weekly reports of DAP catcher/processors also require the submission of discard data. Under Alternative 2, a new risk of penalty to DAP fishermen for reporting high groundfish discards may be expected to result in under-reporting. Therefore, observers onboard DAP vessels collecting bycatch and other data, as is currently done on foreign fishing vessels,

may be necessary to effectively implement Alternative 2. However, observers on DAP vessels involves policy questions that are separate from this amendment proposal. If DAP vessels have onboard observers in the future, the costs of such a program currently are estimated to be $7,500 per observer-month. These costs should be counted against the benefits of all biological and fishery performance data collected (e.g., bycatch, marine mammal monitoring,etc.) and not attributed to any single monitoring purpose such as a non-retainable catch limit.

3.4.3 Administrative, Enforcement and Information Costs

Under Alternatives 2 and 3, discard data would require more careful monitoring and analysis than it currently receives. Although, to some extent, data collection and monitoring systems already are in place, there would be a marginal administrative cost in monitoring non-retainable catch limits in addition to TACs and prohibited species catch limits. The amount of this marginal cost will depend on the number of non-retainable catch limits, the speed at which they are reached, and the probability of the Regional Director providing special exceptions to the limits. A precise estimate of these costs cannot be made due to the variability of these factors, however it is anticipated that current NMFS staff will be able to accommodate this added work load without expansion. Added enforcement costs are anticipated to be minimal since any area closure that may occur by implementing non-retainable catch limits would be enforced by ongoing aerial and at-sea survey and would require little or no extra enforcement effort.

3.4.4 Distribution of Costs and Benefits

To the extent that the costs and benefits of any of the three alternatives will be measurable, they would be largely distributed among and absorbed by fishermen. Any marginal costs to fishermen of non-retainable catch limits may be expected to be passed on to subsequent purchasers of groundfish products. These costs, however, are not expected to be of large enough magnitude that they would have significant effects on retail prices of groundfish products. Retail prices are more likely to be determined by production and marketing costs and profit margins.

3.4.5 Cost/Benefit Conclusion

In summary, under the status quo there is increasing risk that unlimited discard of groundfish species already harvested up to their TAC will result in reduced future TACs and possible overfishing. Also, the status quo provides no assurance that potential foreign allocations of a particular species could be harvested if no associated bycatch of other groundfish species is allowed.

The alternatives providing for non-retainable catch limits would reduce the TAC below the ABC available for key species by an amount to be used as a conservation margin. This would be an immediate cost for those species whose TAC already equals ABC. Another cost would be the potential closure of directed fisheries that were likely to harvest significant amounts of a species for which the non-retainable catch limit was reached. Benefits of these alternatives include reduction of wasteful and unlimited discard and, consequently, better assurance that groundfish stocks will continue to produce high yields by keeping total fishing mortality within ABC estimates. Other benefits result from a procedure to allow reasonable bycatch allowances to be associated with foreign and joint venture directed fishing for allocated species.

The best balance of these relative costs and benefits is provided by Alternative 3. Under this alternative, implementation costs would be less than under Alternative 2 and the potential cost of a JVP fishery closure due to attainment of a PSC limit is moderated by discretionary authority to exceed the ABC of a groundfish species providing the Regional Director can

determine that overfishing of that species would not result. Although relative diminished costs under Alternative 3 imply relatively diminished conservation and management benefits, this alternative is essentially identical to the groundfish PSC limit regime under the Gulf of Alaska Groundfish FMP which has produced arguably positive benefits over the two years of its implementation.

4.0 RESOURCE ASSESSMENT DOCUMENT DEADLINE

4.1 Description of and Need for the Action

Amemdment 1 to the Bering Sea/Aleutian Islands groundfish FMP established a requirement for an annual Resource Assessment Document (RAD) to be prepared by the Plan Team outlining the status of stocks and making estimates of acceptable biological catch. The original amendment established a deadline for delivery as July 1 of each year. This deadline, however, has become ineffective, because summer stock biomass surveys are generally not completed until August-October, thereby relegating a July 1 RAD to information from the previous year. In 1987, the July RAD was simply a restatement of information that had already been presented to the Council at their previous meeting in December 1986.

4.2 The Alternatives

4.2.1 Alternative 1: Do nothing - status quo.

The status quo will retain a requirement that the Plan Team prepare and distribute a RAD by July 1 of each year.

4.2.2 Alternative 2 (Preferred): Remove the July 1 RAD deadline.

The proposed action would remove the requirement to produce a RAD by July 1. Removal of the July 1 deadline would reduce paperwork and the burden on the Plan Team to produce an unessential document. The proposal would not change existing policy that a draft RAD, based upon current information, will be prepared prior to the Council's early autumn (i.e., September) meeting and that a final RAD will be prepared prior to the Council's early winter (i.e., December) meeting.

4.3 Biological and Physical Impacts

This amendment addresses an administrative revision; neither alternative would result in biological or physical impacts to the Bering Sea/Aleutian Islands. The issue is simply one of efficiency in a portion of the bureacracy associated with management of the groundfish fisheries.

4.4 Socioeconomic Impacts

Neither alternative would result in substantial socioeconomic impacts. However, there would be some gains in efficiency, and thereby some administrative cost savings (i.e., one less meeting of the Plan Team, one less document produced and distributed) if the proposal is implemented.

5.0 ROCK SOLE TAC

Rock sole (Lepidopsetta bilineata) are a constituent of the "other flatfish" species complex which is managed as a unit in the eastern Bering Sea and Aleutian Islands. The nine species which comprise the "other flatfish" category are usually caught incidentally in the yellowfin sole fishery at levels below the total allowable catch (Walters and Halliday, 1987). Rock sole have been an important element of this incidental catch in most years and have recently become the object of a domestic roe fishery targeting on sexually mature female rock sole.

5.1 Description of and Need for the Action

It is believed that 1986 was the first year in which roe-bearing rock sole became an important target species for domestic (DAP) fishermen. Because rock sole are not currently a separate species category for management purposes but, instead, are included in the "other flatfish" category, domestic harvests of rock sole cannot be isolated from the remaining species in the "other flatfish" category with assurance. Inseason weekly catch reports required of DAP catcher/processors have not separated "rock sole" from other flatfish landings. Requirements that "rock sole" catches be reported as a separate species entry on ADF&G fish tickets have not been enforced, thus resulting in incomplete year-end catch statistics for this species. Voluntary reporting of roe rock sole landings, by at least some DAP operators, began in 1986.

Joint venture (JVP) fishermen are believed to have entered the directed roe rock sole fishery for the first time in 1988 although, historically, significant landings of rock sole have been recorded in the JVP fisheries:

Rock sole composition in Bering Sea Area 51 JVP flatfish fishery

Year	% Rock sole	Rock sole (mt)	Flatfish (mt)
1983	26.5%	9,013	34,034
1984	23.7%	11,791	49,743
1985	15.8%	27,259	172,403
1986	7.4%	15,916	215,904

Source: NMFS U.S. Foreign Observer Program, NWAFC, Seattle, WA

While roe-bearing rock sole had once been harvested by foreign fisheries (TALFF), JVP fisheries had, prior to 1988, only taken rock sole incidentally to target fisheries on yellowfin sole.

Estimates presented in support of the original proposal (Alternative 2) assert that an annual market exists in Japan for approximately 15,000 mt of roe-bearing rock sole. Subsequently, information obtained from published material and from letters supplied by the petitioners, suggest the Japanese market may have historically ranged, from as little as 10,000 mt to as much as 20,000 mt, annually. These same sources further suggest that any expansion of this relatively limited market will require promotional effort and perhaps significant price concessions on the part of suppliers.

From late 1986 to the present, the Tokyo wholesale price for roe rock sole has reportedly varied from a high of 900-950 yen/kg for large fish (January 1987), to a low of 550-570 yen/kg

for large fish (March 1988). (Source: Bill Atkinson's News Report [BANR]). At the prevailing exchange rate, that reflects a Tokyo wholesale price of $6.15/kg down to $4.32/kg.[1]

Information provided by the petitioners suggests that DAP supplied roe rock sole product entering the Japanese market is competitively disadvantaged, as compared to JVP product, due to an apparently discriminatory import duty. Japanese JVP operators pay duty on the value of fish in the round. U.S. DAP operators exporting to Japan must pay duty on the estimated market value of the product. The following example was prepared by Mr. Terry Baker, Arctic Alaska Fisheries Corp., and submitted to the Council by Alaska Factory Trawlers Association (AFTA) in support of its petition:

ROE ROCK SOLE JAPANESE JVP	ROE ROCK SOLE U.S. DAP
Fish Round Weight 2,200 lbs.	Fish Round Weight 2,200 lbs.
Finished H&G (60% yield)	Finished H&G (60% yield)
1,320 lbs. roe rock sole	1,320 lbs. roe rock sole
Import Market Value	Import Market Value ($1.50/lb)
$450.00/mt	$1,980.00/mt
Duty Rate 5%	Duty Rate 5%
Duty owing $22.50/mt	Duty owing $99.00/mt

The DAP supplier exporting roe rock sole to the Japanese market pays, according to this information, 4.4 times the duty paid by Japanese JVP suppliers of the same product.

The original proposal further contends that DAP roe rock sole fishermen can supply the existing market demand and that additional product, beyond the approximate 15,000 mt current DAP output, supplied by JVP would result in drastic price reductions which would further disadvantage DAP fishermen.

One proposal (Alternative 2) to amend the Bering Sea/Aleutian Islands Groundfish FMP would prohibit the retention of more than 30% of rock sole in JVP catches during the period January 1 to April 1. Another alternative (Alternative 3), to protect the alleged market, would establish rock sole as a distinct species, outside of the "other flatfish" group and allow for seasonal apportionments to DAP, JVP, and TALFF. Alternative 4 would simply separate rock sole from "other flatfish" without establishing a mechanism for seasonal apportionments.

5.2 The Alternatives

5.2.1 Alternative 1: Status quo.

Currently, the harvest of rock sole is loosely controlled under a combined total allowable catch (TAC) restriction for a group of "other flatfish." Much of this TAC is apportioned to JVP in order to provide sufficient bycatch for the established yellowfin sole fishery. Apportionment to DAP in 1988 was requested to satisfy the roe-bearing rock sole market as well as to provide bycatch for other fisheries. Under the status quo, there is no specific limitation to the amount

[1] BANR notes that the Tokyo wholesale price quotes include, among other things, fixed sales commissions and market handling charges. Furthermore, these quotes should be regarded as "offer bids" and not as actual transactions prices.

of roe-bearing rock sole that can be retained by JVP, so long as harvests are within the overall JVP apportionment of "other flatfish" (85,261 mt, plus some portion of possible reserves of 19,705 mt).

5.2.2 Alternative 2: JVP prohibition on retention of more than 30% rock sole between January 1 and April 1.

Alternative 2 would establish a limit on the retention of rock sole in JVP fisheries during the spawning period. Specifically, JVP fisheries would be precluded from targeting on rock sole, constrained to no more than 30% rock sole bycatch in other JVP directed groundfish fisheries during the period January 1 to April 1.

5.2.3 Alternative 3: Establish a separate TAC for rock sole, subdivided into two seasons.

Alternative 3 would separate rock sole from the "other flatfish" group, establish a TAC specifically for rock sole, and would further develop a split-season apportionment to isolate harvest of roe-bearing rock sole from harvests outside of the spawning season. Precedent for such a management action exists in the split-season JVP apportionment of pollock passed under Amendment 11.

5.2.4 Alternative 4 (Preferred): Establish a separate TAC for rock sole.

Alternative 4 would separate rock sole from the "other flatfish" group and establish a TAC specifically for rock sole.

5.3 Biological and Physical Impacts

5.3.1 General Biology

The rock sole is distributed from California waters north into the Gulf of Alaska and Bering Sea to as far north as the Gulf of Anadyr. The distribution continues along the Aleutian Islands westward to the Kamchatka Peninsula and then southward through the Okhotsk Sea to the Kurile Islands, Sea of Japan and off Korea. Centers of abundance occur off the Kamchatka Peninsula (Shubnikov and Lisovenko, 1964; Shvetsov, 1976), in British Columbia (Forrester and Thompson, 1969), the western Gulf of Alaska, and in the southeastern Bering Sea (Alton and Sample, 1975).

Wilimovsky et al., (1967) recognize three subspecies based on counts of gill rakers and lateral line pores. Lepidopsetta bilineata bilineata (Ayers) off the west coast of North America, L. bilineata peracuata (Cope) of the Gulf of Alaska, Bering and Okhotsk Seas and L. bilineata mochigaeri Snyder of the northwestern Pacific Ocean. Reproductive intermingling of stocks at the eastern and western extremities of the peracuata range is suspected to occur.

Throughout their range, rock sole spawn during the winter-early spring period of February-June. In the eastern Bering Sea, spawning reportedly takes place from about March-June (Fadeev, 1965, Shubnikov and Lisovenko, 1964). Concentrations of rock sole during winter and early spring were found from research conducted by Soviet investigators in the early 1960s. Additionally, ripe and spent fish were encountered off Bristol Bay at depths of 70 to 140 m at bottom temperatures above 0 degrees Centigrade. Winter temperatures on the shallow shelf waters frequently remain below 0 degrees Centigrade where small sexually immature rock sole remain during the winter at depths of less than 150 m. Recent information from U.S. fisheries targeting on spawning rock sole indicate that rock sole begin to form spawning concentrations in early December which become largely dispersed by the end of March.

Sampling of spawning rock sole for size and age at maturity in the eastern Bering Sea has not been extensive enough to construct age and size at maturity relationships. Available data from two samples of adult rock sole from British Columbia show the smallest observed mature fish were 31 cm for females and 28 cm for males (Forrester and Thompson, 1969). Conversely, the largest immature fish were 43 cm for females and 36 cm for males. The size of 50% maturity in females is reportedly 32-33 cm which would correspond to an age of 8-9 years old (NWAFC aged rock sole) and some length less than 30 cm in males or an age less than 8 years old.

Male and female rock sole exhibit similar growth rates through the first five years at which point female rock sole growth continues at a faster rate (Levings, 1967; Weber and Shippen, 1975). Rock sole growth in the eastern Bering Sea is reported to be exclusive to the period from the end of March to August when they feed primarily on benthic invertebrates and to a lesser extent small fish (Figure 5.1; Shubnikov and Lisovenko, 1964). Levings (1967) analyzed rock sole growth rates from age samples collected from British Columbia, the western Gulf of Alaska, and the northwest Bristol Bay area and concluded that rock sole growth is slower at the northern end of their distribution.

Spawning female rock sole deposit a mass of eggs which are demersal and adhesive (Alton and Sample, 1975). Fertilization is believed to be external. Incubation time is temperature dependent and may range from 6.4 days at 11 degrees C to about 25 days at 2.9 degrees C (Forrester, 1964). Newly hatched larvae are pelagic and have occurred sporadically in eastern Bering Sea plankton surveys (Waldron and Vinter, 1978). Kamchatka larvae are reportedly 20 mm in length when they assume their side-swimming, bottom-dwelling form (Alton and Sample, 1975). Forrester (1969) reports that by age 1 they are found with adults on the continental shelf during summer.

Available data on the fecundity of rock sole in the southeastern Bering Sea from Fadeev (1965) is presented in Table 5.1 for 35 females.

5.3.2 Status of Stocks

Information on eastern Bering Sea rock sole abundance is available from NWAFC bottom trawl surveys conducted annually from 1979 to the present. Survey results indicate an increasing trend of population density and estimated biomass since 1975 (Figure 5.2; Walters and Halliday, 1987). Exploitable biomass from the 1986 and 1987 surveys is estimated to be over 1 million metric tons, a more than five-fold increase over the 1979 estimates. Rock sole ages from the 1984 survey suggest that strong recruitment from the 1975-1980 year classes have supported the increased biomass. Size composition data from survey years since 1984 indicate that this trend of strong recruitment is continuing.

Species of the "other flatfish" group remain underutilized and are usually taken in the yellowfin sole fishery during the late spring and summer. The all-nation catch quota for this species group has never been realized. The eastern Bering Sea rock sole resource is thought to be at a level above virgin biomass (Walters and Halliday, 1987).

5.3.3 Distribution of Spawning Rock Sole

Throughout their range, rock sole are known to spawn between February and June usually in areas near the shelf/slope margin. Soviet investigators in the early 1960s reported wintertime concentrations of rock sole southeast of the Pribilof Islands and northwest of Unimak Island (Shubnikov and Lisovenko, 1964; Fadeev, 1965). Recent biological sampling of the spawning population has not been completed since the NWAFC Bering Sea demersal trawl surveys occur from June through August and observer coverage is usually commensurate with the summertime yellowfin sole foreign and joint venture fisheries.

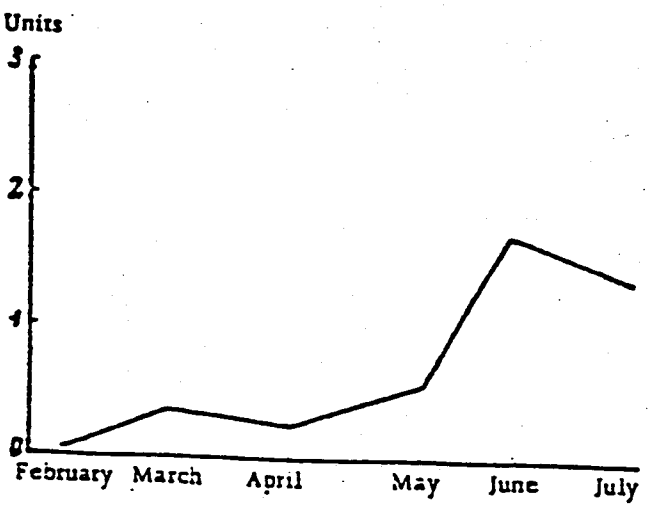


Fig. 5.1 Changes in the degree of stomach fullness in southeastern Bering Sea rock sole by month (Shubnikov and Lisovenko, 1964).

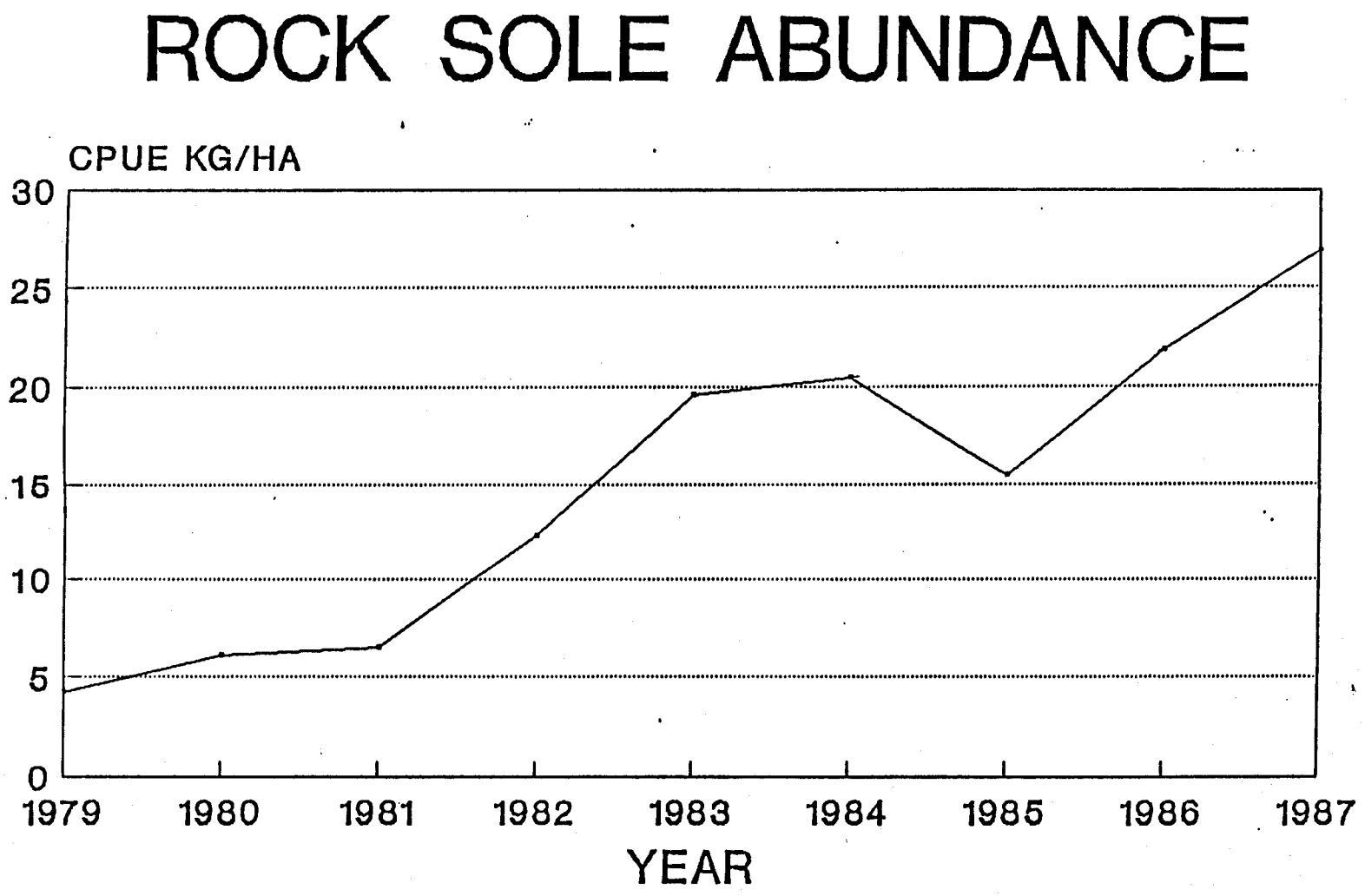


Fig 5.2.-- Trends of CPUE for eastern Bering Sea rock sole as estimated from NWAFC demersal trawl surveys, 1979-1987.

Table 5.1 Fecundity of southeastern Bering Sea rock sole (thousands of eggs; Fadeev, 1965)

Length (cm)	Rock Sole
14.1 - 16.0	--
16.1 - 18.0	--
18.1 - 20.0	--
20.1 - 22.0	--
22.1 - 24.0	151.7
24.1 - 26.0	--
26.1 - 28.0	--
28.1 - 30.0	--
30.1 - 32.0	180.6
32.1 - 34.0	179.1
34.1 - 36.0	226.9
36.1 - 38.0	287.1
38.1 - 40.0	297.5
40.1 - 42.0	404.2
42.1 - 44.0	--
44.1 - 46.0	--
46.1 - 48.0	--
48.1 - 50.0	--
Number of fish	35
Relative population size (%)	12.8
Average egg diameter (mm)	0.68

Available data on the catch of rock sole from February-April by foreign and joint venture vessels from 1980-87 are presented in Figures 5.3-5.10. Although these geographic catch distributions are partially a function of available observer coverage and fishing strategy, rock sole captured during these months are assumed to be in spawning condition and were usually caught in the areas identified as spawning concentrations by the Soviet investigators.

Rock sole larvae were present from Japanese plankton sampling during 1955-58 (Waldron, 1976). More recently, ichthyoplankton sampling with bongo nets at 64 locations in the eastern Bering Sea during mid April to mid June 1977 produced rock sole from 31% of the samples. Rock sole larvae were caught over the continental shelf at depths between 100-200 m and were distributed from the Alaska Peninsula-Aleutian Islands area northwest to the Pribilof Islands (Figure 5.11; Waldron and Vinter, 1978). Rock sole larvae were also caught in this same area during a similar ichtyoplankton survey June 1 - July 23, 1979 (pers. comm. Jay Clark, NWAFC).

5.3.4 Impact of the Roe Fishery

Rock sole ovaries are a highly desired food item in Asian countries such as Japan. The DAP fishery in 1987 was characterized by locating spawning concentrations of rock sole and then heading, gutting and freezing the females while discarding the males. The total catch of rock sole by month (February-June) from the all nation fisheries in the eastern Bering Sea (Table 5.2) indicates that removals of spawning rock sole throughout the 1980s have been insignificant compared to the magnitude of the total allowable catch levels allocated to this species (conceivably 100% of the quota in any year, 131,369 mt for 1988). The rock sole proportion of the "other flatfish" catch category has ranged from 23% to 58% of the total catch for the years 1963-1986 (Walters and Halliday, 1987). Harvesting spawning rock sole at these levels has not inhibited the total resource from increasing to its present abundant level during this decade, and therefore, no conservation reason presently exists to limit the roe fishery. This is particulary true if the total harvest remains at present levels.

In light of the continuing strong recruitment reported from resource assessment surveys and the fact that rock sole biomass is thought to be at a level above virgin biomass (Walters and Halliday, 1987), no conservation reason presently exists to support a prohibition of harvesting spawning rock sole. There appears to be no discernible biological impact of the roe fishery and no distinction concerning the biological consequences among alternatives.

5.4 Socioeconomic Impacts

5.4.1 Available Information

Rock sole is not always distinguished from "other flatfish" in catch reporting systems, making accurate estimation of total production difficult, and estimation of roe-bearing rock sole harvest somewhat suspect. Attempts to compile rock sole landings, particularly for the DAP directed roe fishery, have relied upon limited observer coverage onboard DAP vessels (11 sampling days in 1987 and 15 sampling days in 1988, each on only a single vessel in the DAP fleet). However, U.S. Foreign Observer Program data on rock sole landings for the months February through June indicate that, beginning in 1982, JVP has taken increasing amounts of roe-bearing rock sole from Area 1 in the Bering Sea, mostly attributable to incidental catch in the yellowfin sole fishery (Table 5.2). DAP production has also increased, reportedly from 5,000 mt in 1986 to 9,000 mt in 1987 (PacFIN landing data for Area 1 estimate DAP rock sole landings for February through June at 2,982 mt for 1986 and 10,307 mt for 1987).

Information on roe-bearing rock sole market characteristics are not readily available from secondary public sources but, because the proposal is predicated on an assertion that the

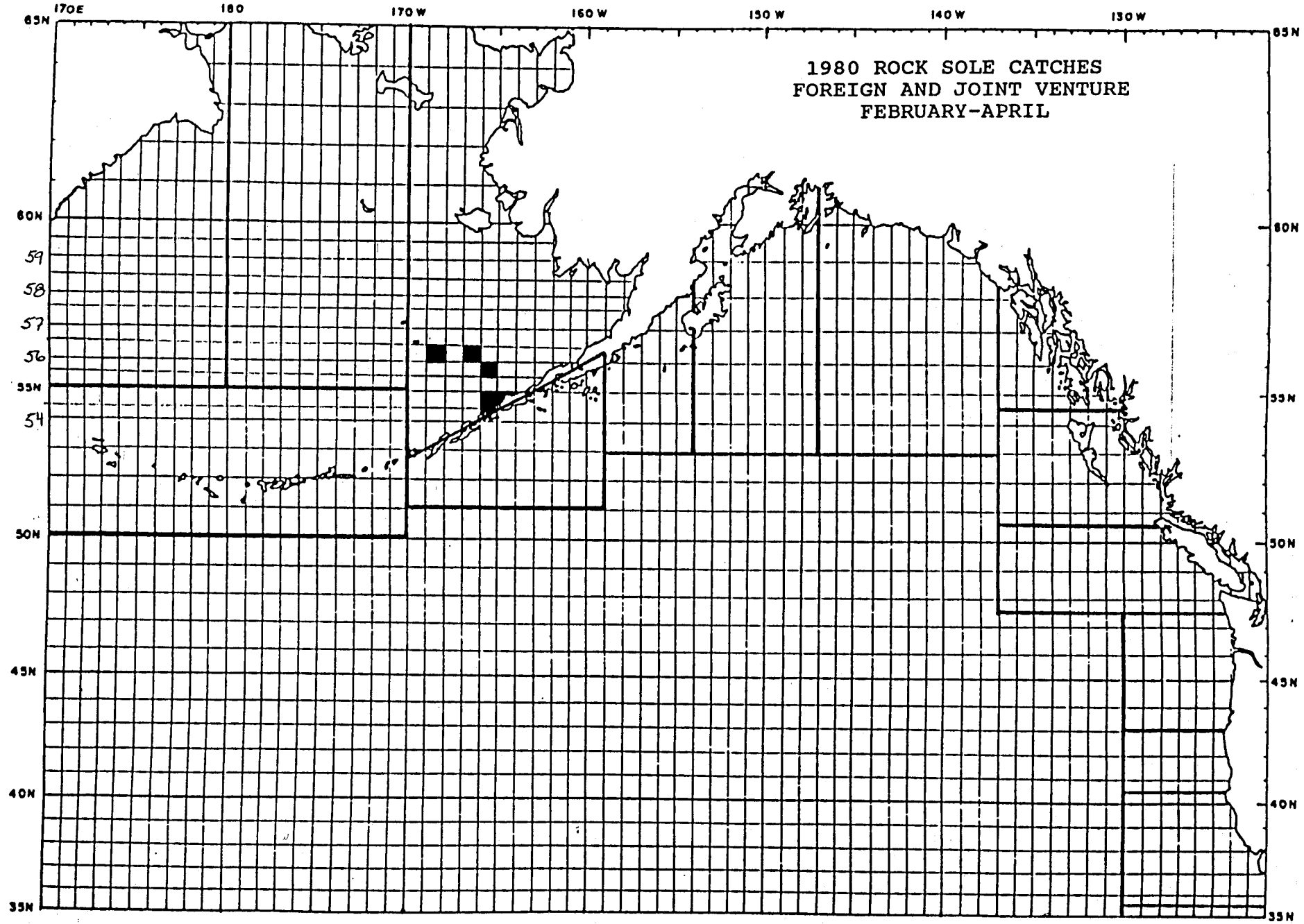


Fig 5.3.-- Geographical location of foreign and joint venture rock sole catches during February-April 1980 when observers

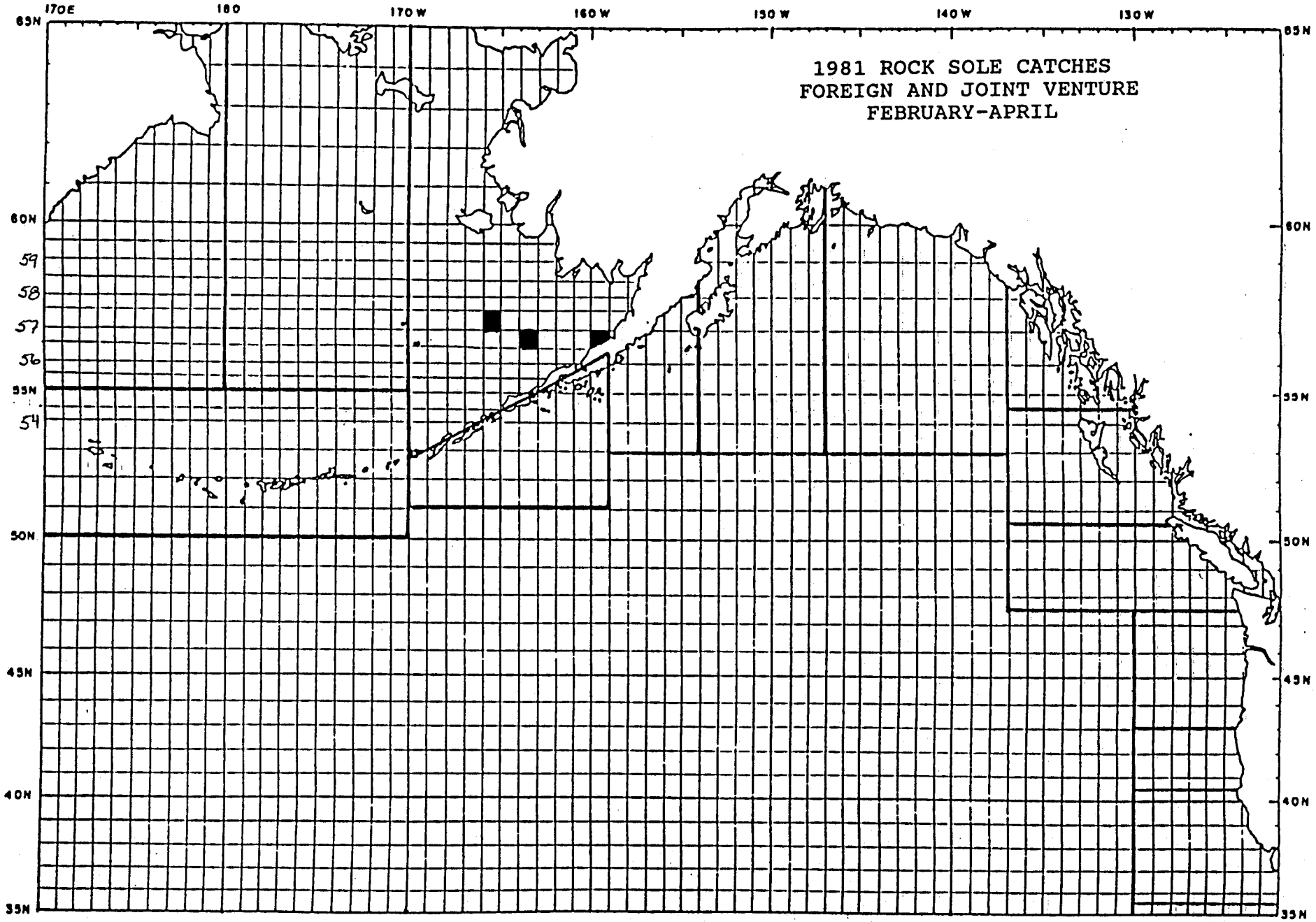


Fig 5.4.-- Geographical location of foreign and joint venture rock sole catches during February-April 1981 when observers were present.

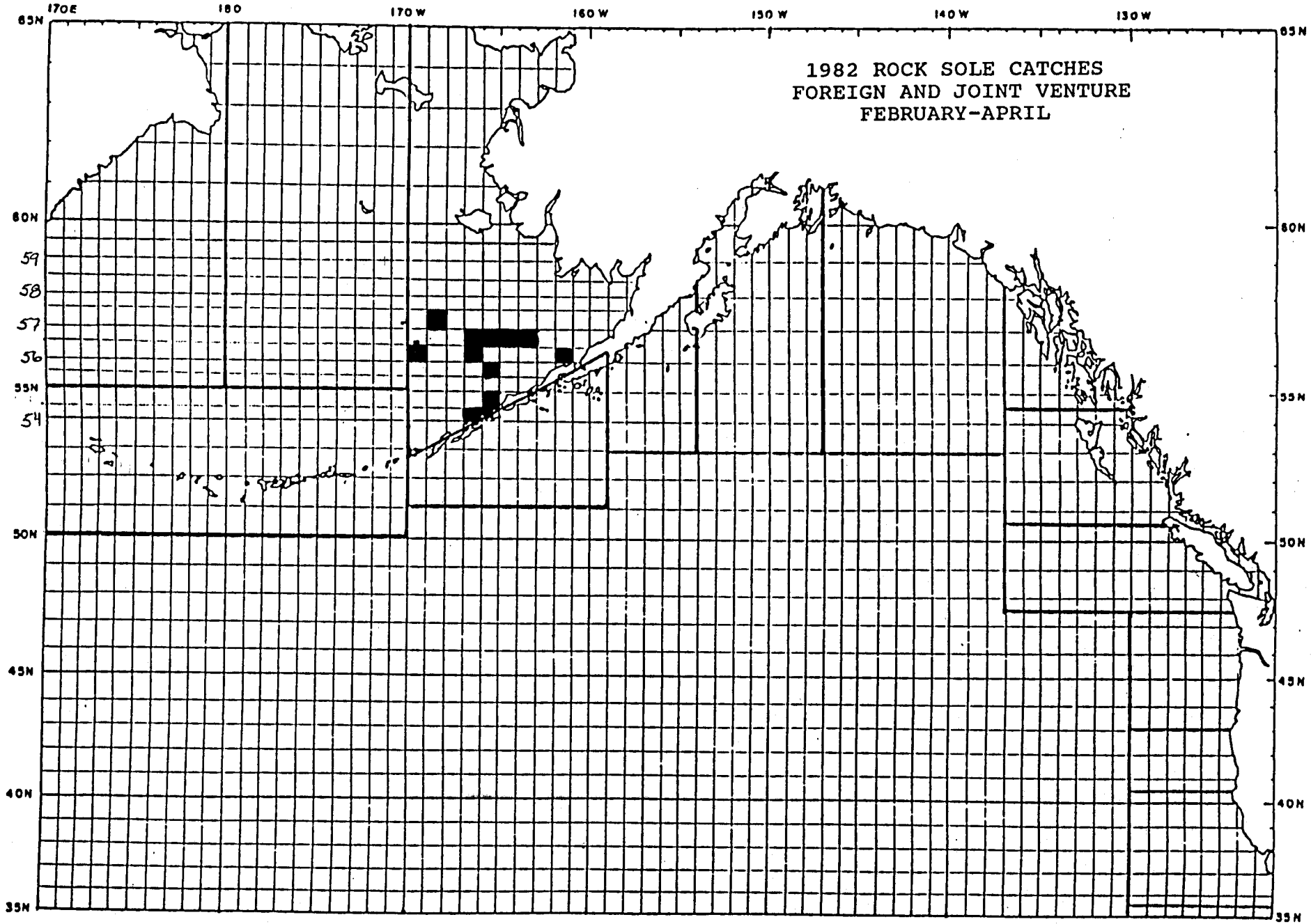


Fig 5.5.-- Geographical location of foreign and joint venture rock sole catches during February-April 1982 when observers

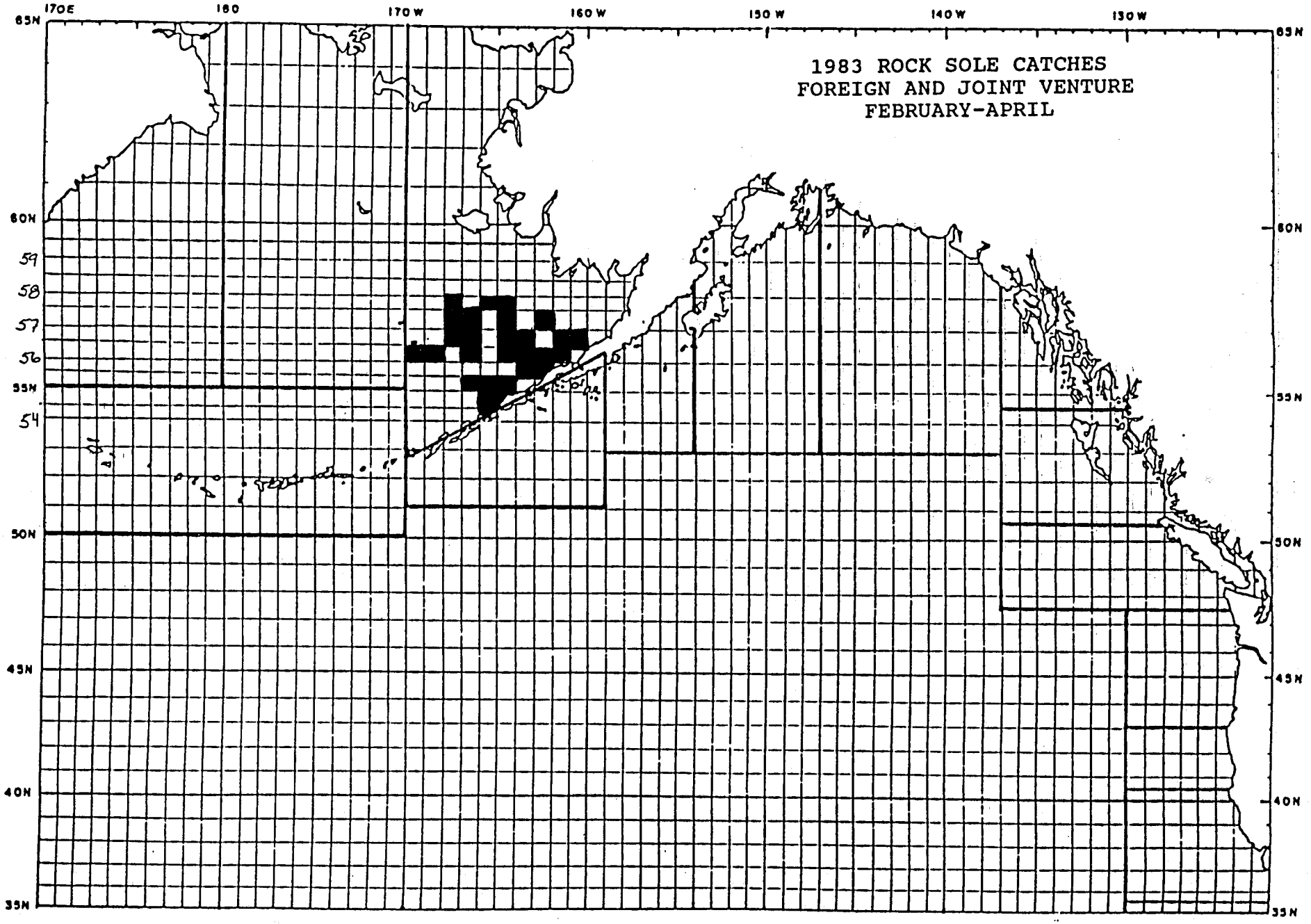


Fig 5.6.-- Geographical location of foreign and joint venture rock sole catches during February-April 1983 when observers were present.

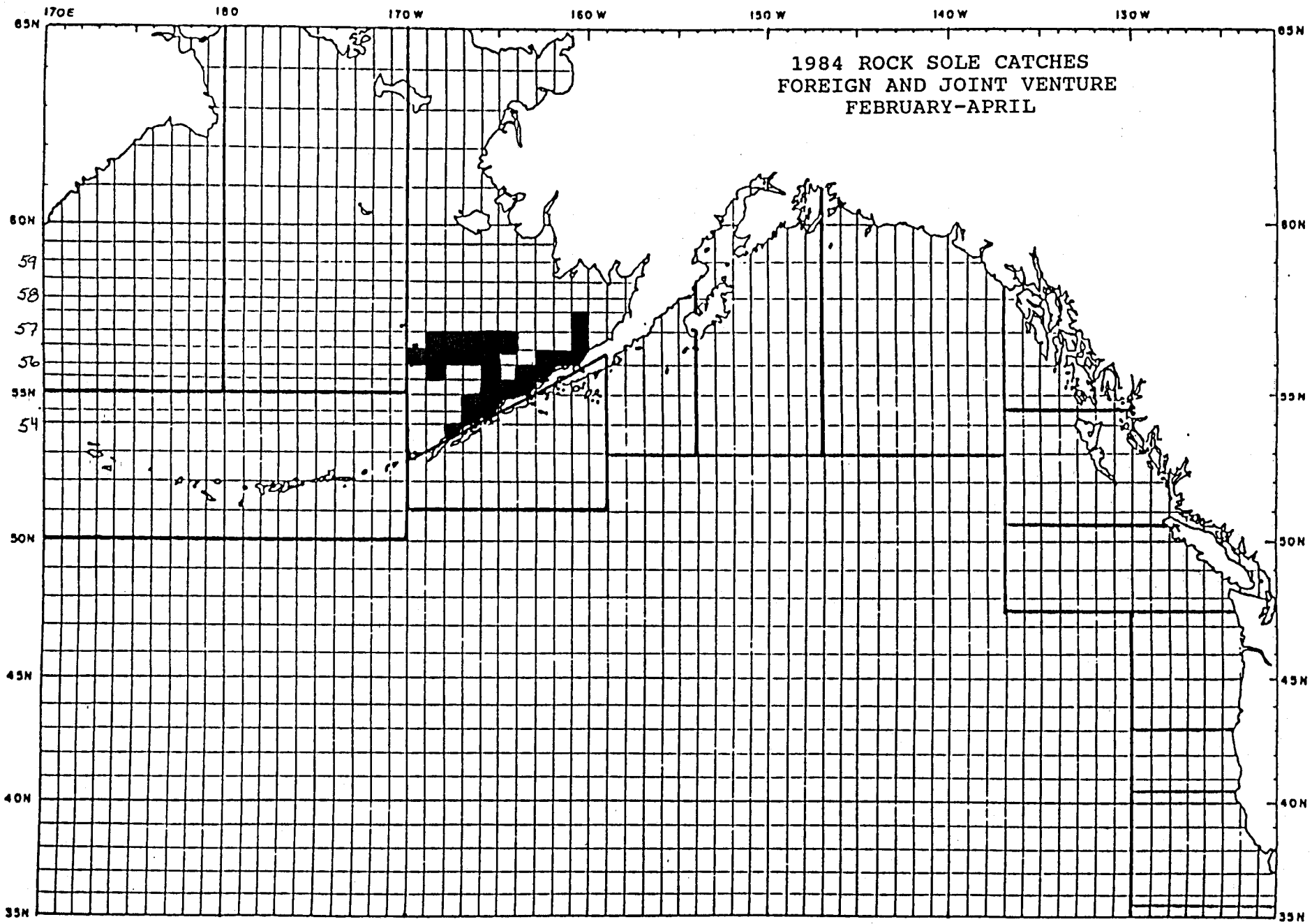


Fig 5.7.-- Geographical location of foreign and joint venture rock sole catches during February-April 1984 when observers

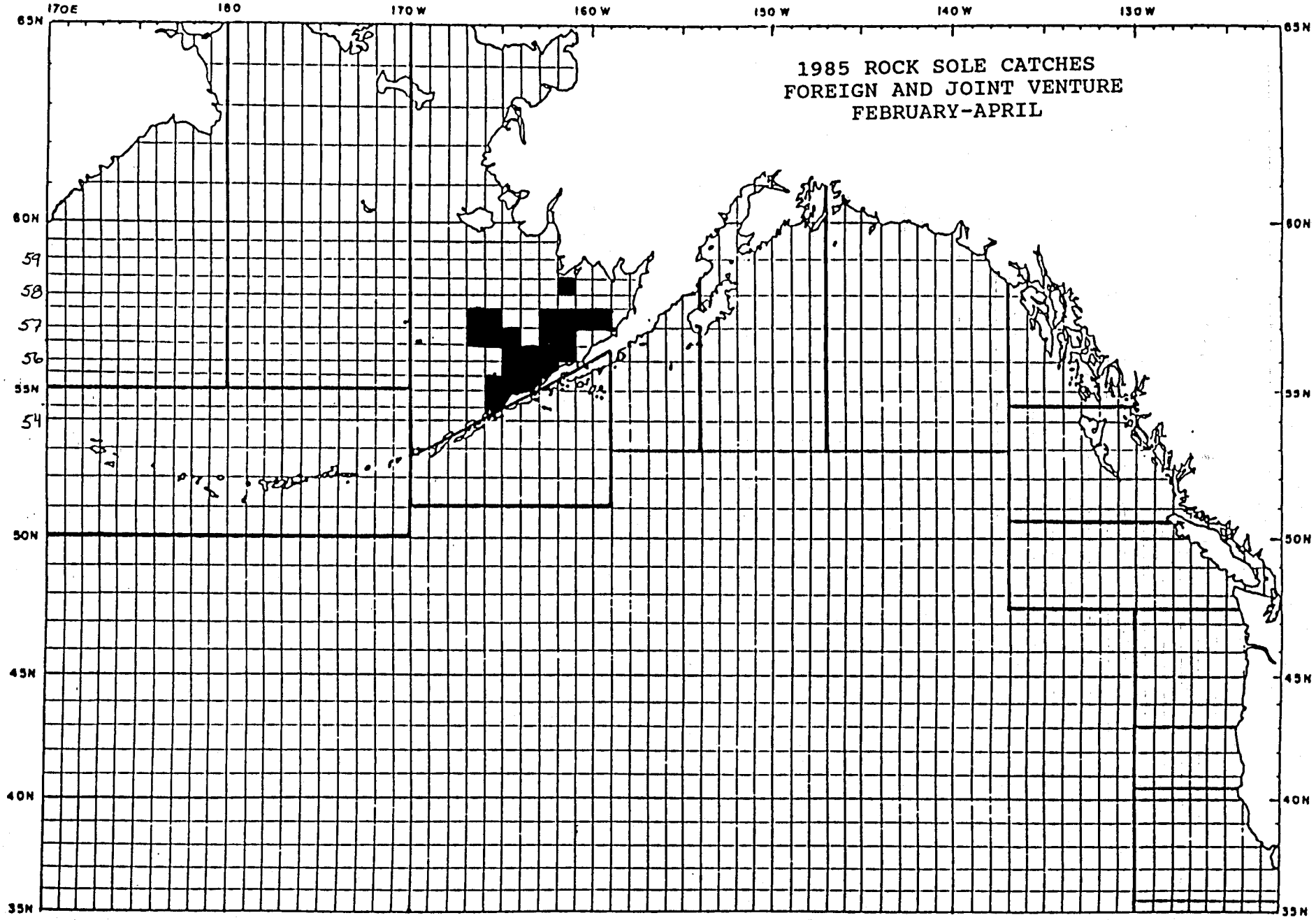


Fig 5.8.-- Geographical location of foreign and joint venture rock sole catches during February-April 1985 when observers

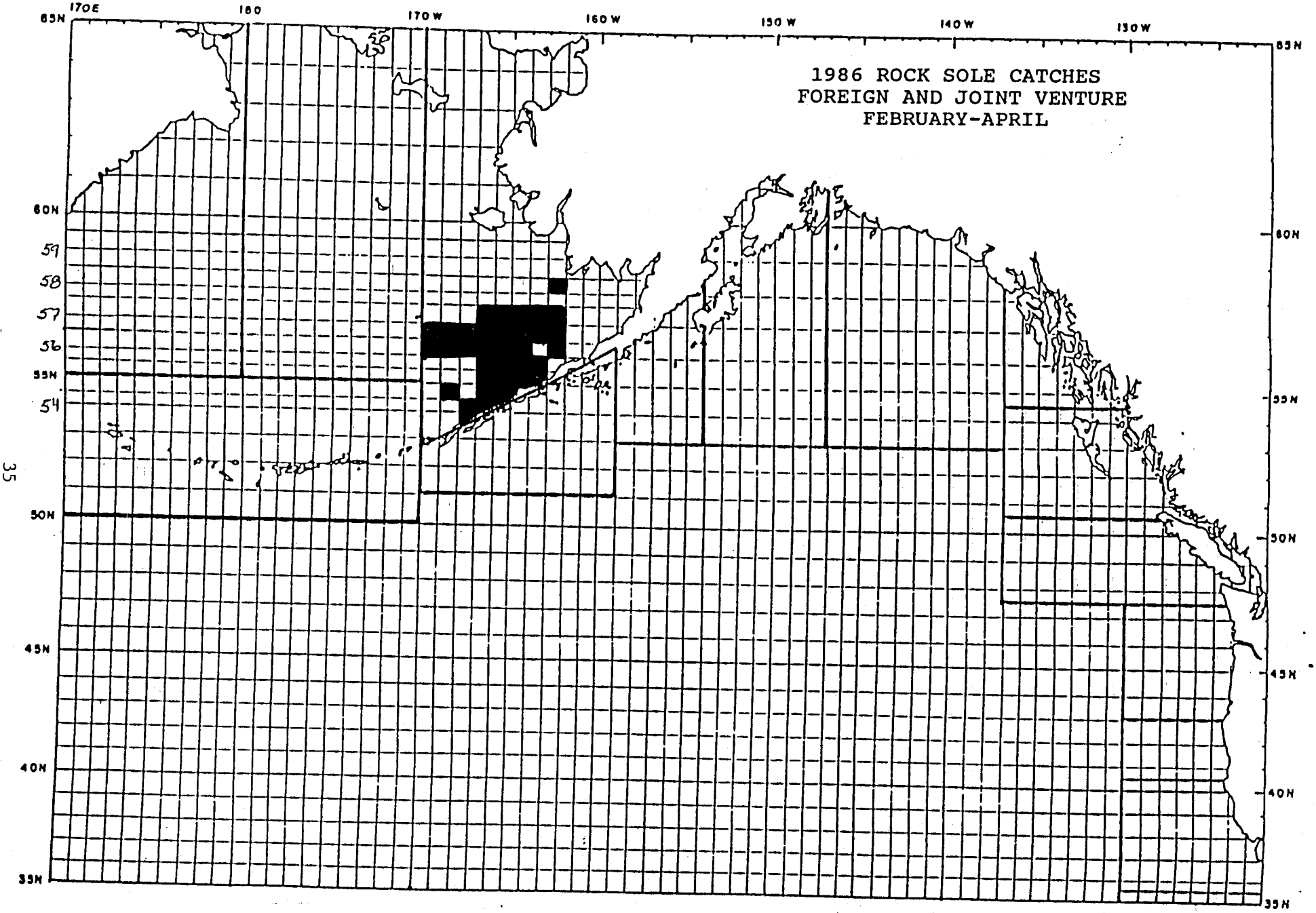


Fig 5.9.-- Geographical location of foreign and joint venture rock sole catches during February-April 1986 when observers were present.

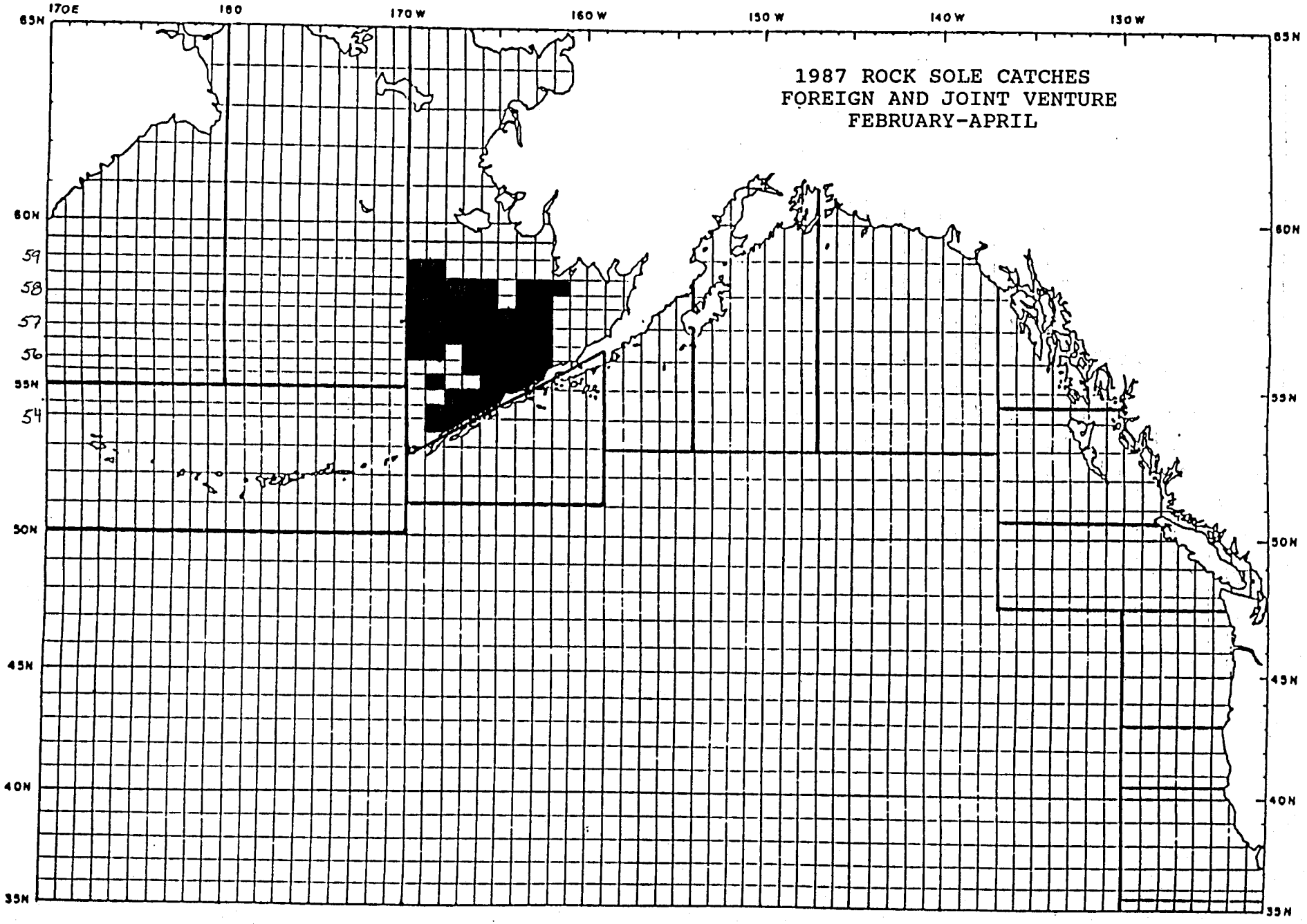


Fig 5.10.-- Geographical location of foreign and joint venture rock sole catches during February-April 1987 when observers were present.

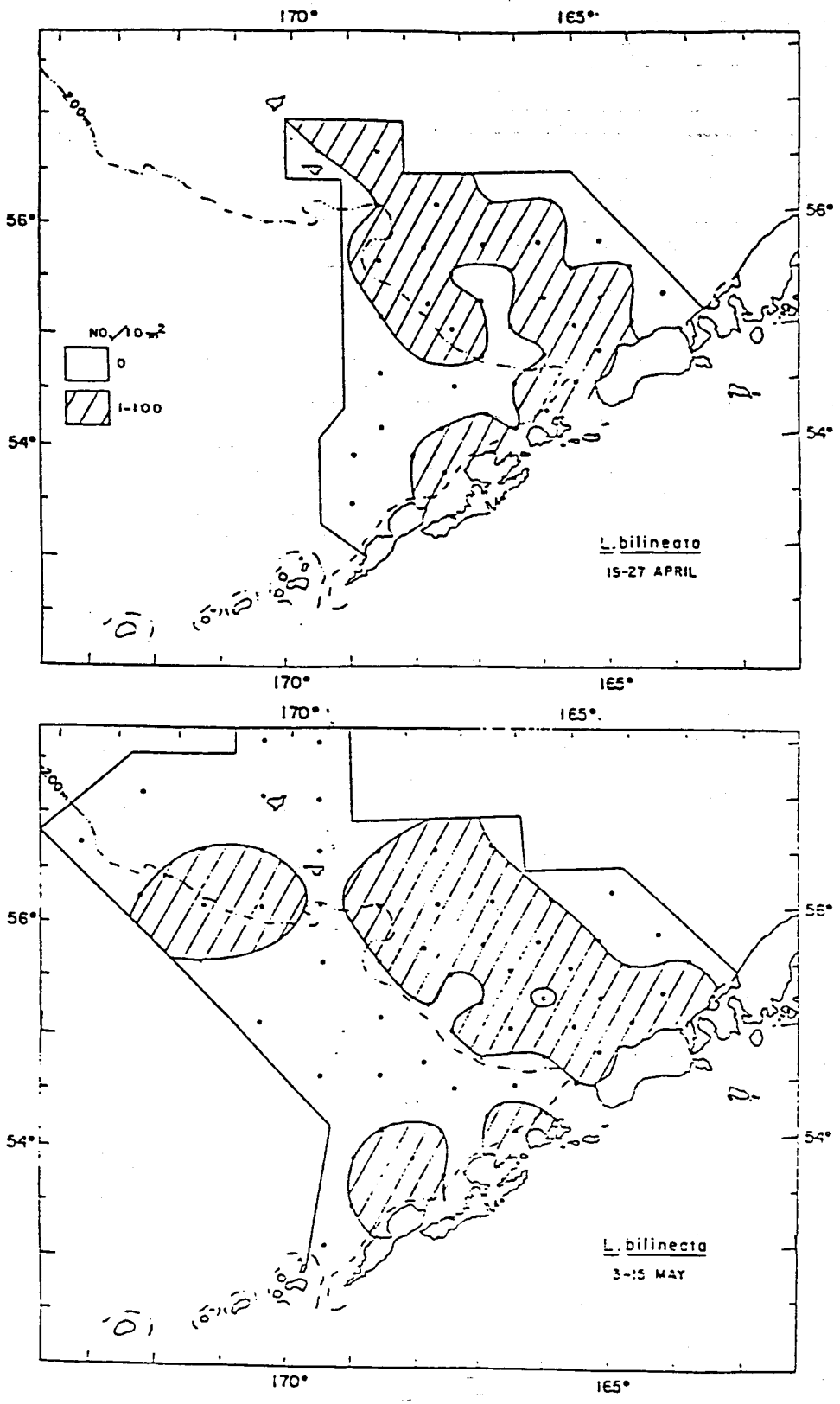


Fig 5.11.-- Distribution and relative abundance of rock sole larvae in the southeastern Bering Sea, 16 April-15 May 1977. (Miller Freeman cruise MF-77B).

Table 5.2 Catch of rock sole (t) during February-June 1980-1987 in Bering Sea area 1. The 1985-1987 foreign and joint venture species compositon of rock sole from "other flatfish" category were estimated from observer sampling and are approximate values.

	1981		1982		1983		1984		1985		1986		1987	
Month	JV	FRN	JV	FRN	JV	FRN	JV	FRN	JV	FRN	JV	FRN	JV	FRN
February		23	1	20	47	38	62	38	327	115	570		654	1
March		12	33	62	599	81	185	184	303	34	1,004	17	450	tr
April		50	708	115	779	196	1,241	395	803	11	354	88	610	3
May	1,176	130	1,298	174	1,700	288	1,319	215	458	36	1,623	11	79	
June	1,195	221	2,486	193	1,996	240	2,501	309	1,503	250	820	38	220	3
Total	2,371	436	4,526	564	5,121	843	5,308	1,140	3,395	446	4,370	154	2,013	7
Total JV & Foreign	2,807		5,090		5,964		6,449		3,841		4,524		2,021	
Domestic									3		2,982		5,183	
Grand Total	2,807		5,090		5,964		6,449		3,844		7,506		7,204	

Japanese market is very small (reportedly no more than 15,000 mt) and highly price sensitive, such data are essential to a comprehensive economic evaluation of this claim.

Some information was obtained from published seafood industry reports and from DAP industry representatives. For example, historic Japanese market price data have been compiled from issues of BANR, which provided periodic observations on port-of-landings, consumer, and wholesale market prices, beginning in 1983. These nominal price series suggest some seasonality in demand for roe rock sole and cyclical price behavior. The prices reported are estimates of bid prices, including assumed fixed commission rates and handling charges, not actual transaction prices. Additionally, the price series is in nominal yen/kg which does not account for changes in either the Japanese rate of inflation or in the dollar/yen exchange rate. These problems have been partially corrected in the series presented in Figures 5.12 and 5.13.

For the first price series, 1976-1986 (Figure 5.12), the Japanese Producer Price Index (PPI) was used to account for inflation (or deflation) in the Japanese manufacturing sector. For the second price series (Figure 5.13), prices in the units of yen/kg were converted to prices in terms of dollar/lb to account for recent declines in the yen/dollar exchange rate.

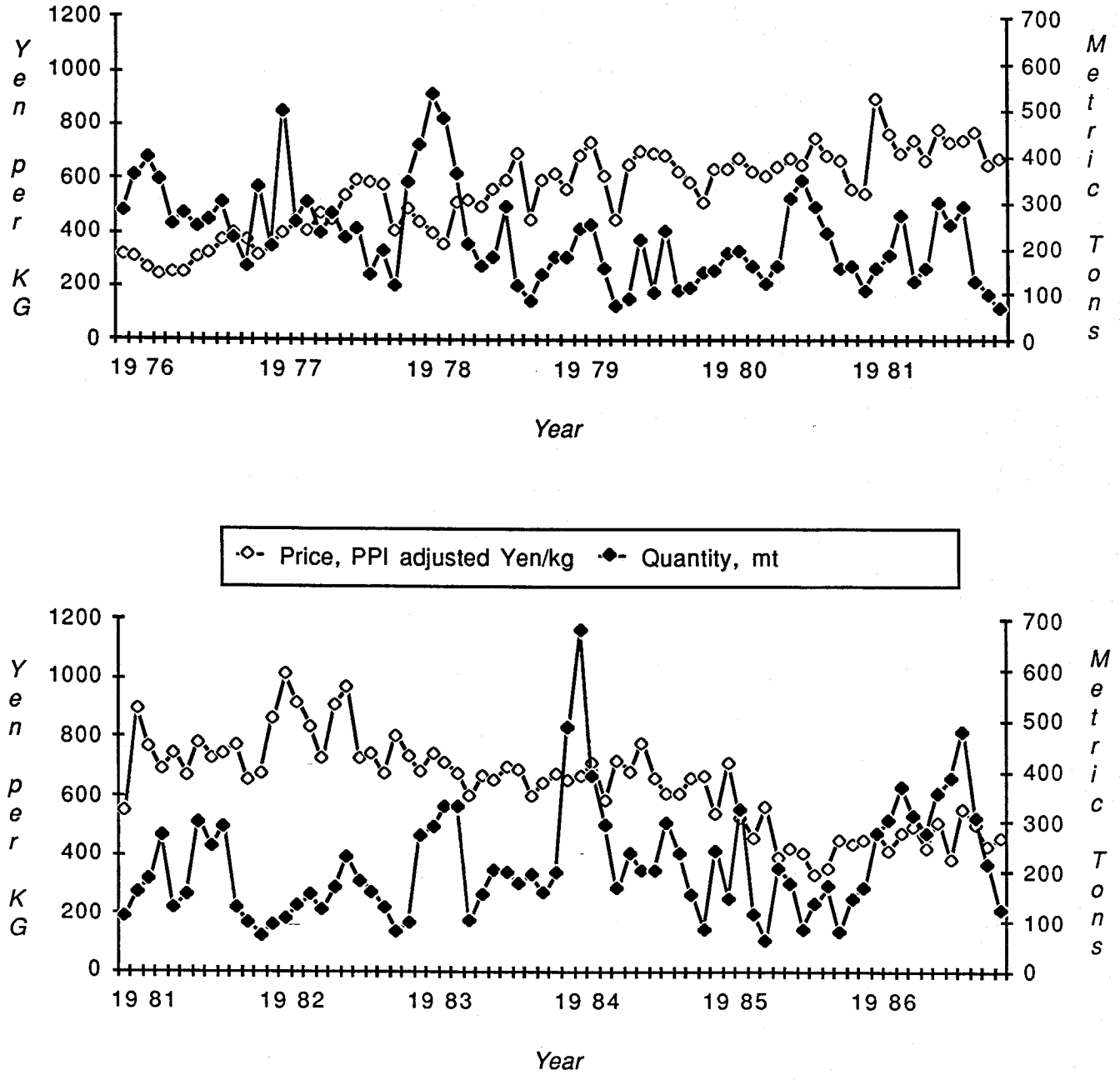
Since quantity information is available only for the 1976-1986 price series, those data were used to explore the relationship between quantity and price in the Japanese market. A simple examination of the two variables indicated a statistically significant correlation (Pearson's product moment correlation = -0.280; $P=0.001$; see also Figure 5.14). A simple linear regression of price as a dependent valuable against quantity indicated significant statistical correlations ($F = 12.02$; $P=0.001$); however, the regression explains less than 8% of the variance in price. This means that variables other than quantity are influencing price and that the standard error of the relationship betwen quantity and price is relatively large. For example, using an overall mean for monthly quantity purchased of 220 mt, the 99% confidence interval for predicted price would range from 350 yen/kg to 660 yen/kg (adjusted for Japanese producer prices), implying that our ability to predict a change in price, given a change in quantity, is limited.

Over roughly the same period of time, the BANR reports sporadic anecdotal information on the Japanese rock sole roe market. When cross-referenced with the price series information described above, however, discrepancies were found. This may result from some of this anecdotal information referring to single landings or shipments, with occassional price citations, while the series are aggregated approximations of general market tendency. While representing some interesting glimpses of temporally or geographically isolated segments of the market, the information is not sufficiently consistent or of suitable breadth to support an analytical assessment. After consultation with the BANR publisher, it is apparent that published sources of price and quantity information on the Japanese roe rock sole market, needed for demand and supply estimation (including data on numbers, supplies, and prices of substitutes in the market, and consumer preferences and characteristics) are not available in the U.S. public domain.

Subsequent consultation with other fisheries experts (including, among others, Dr. John Gissberg, recently the U.S. Fisheries Attache to Japan; Mr. Tomohira Asakawa, U.S. Foreign and Commercial Service, American Embassy, Tokyo; and Mr. Clinton Atkinson, fisheries consultant and former U.S. Fisheries Attache to Japan) provided no more specific information on the roe rock sole market, beyond a supposition that, while roe rock sole may be a preferred product, other roe-bearing flatfishes such as American (Atlantic) plaice and yellowfin sole are potential substitutes for rock sole. Although there is some apparent price differentiation among these species, it is likely that they are relatively close substitutes in consumption.

Sources report that nominal Japanese market prices for roe rock sole have taken a sharp down turn over approximately the last 12 to 18 months. While there are, undoubtedly, a number of

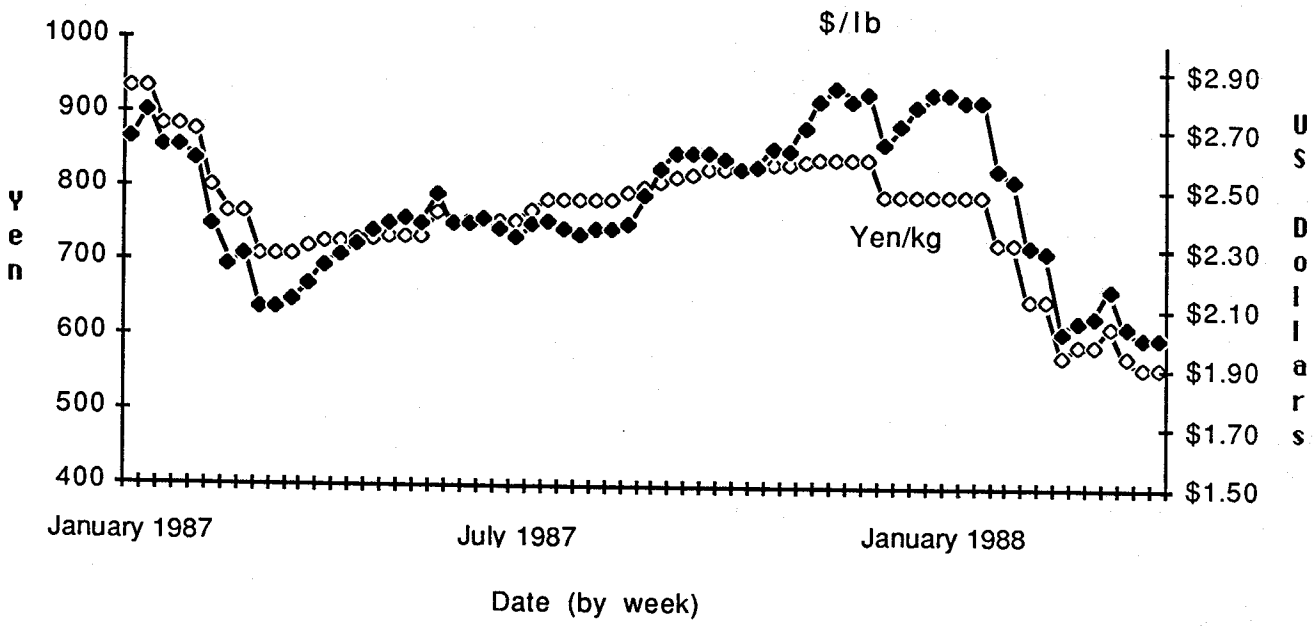
Figure 5.12 Monthly Frozen Rock Sole Price and Quantity, Tokyo Wholesale Market, 1976-1986



Note: Over 90% of the rock sole was roe bearing.

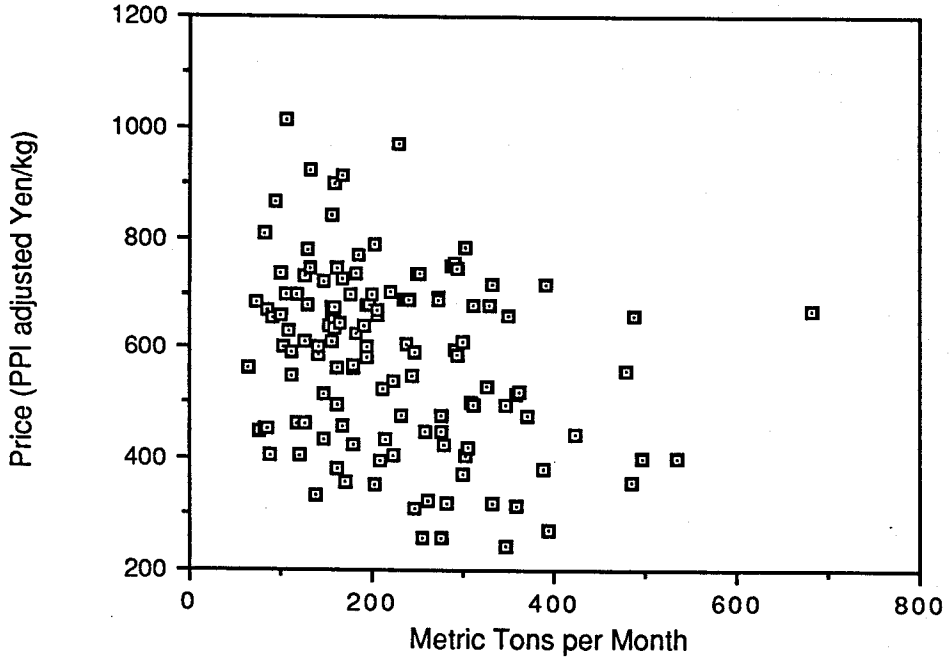
Source: C. Atkinson, Seattle, Wa.

Figure 5.13 Weekly Frozen Rock Sole With Roe Price (Yen/kg and $/lb) on the Tokyo Wholesale Market , Jan 1987 to April 1988



Source: C. Atkinson, Seattle, Wa.

Figure 5.14 Frozen Rock Sole Price vs Quantity, Tokyo Wholesale Market, 1976-1986



Note: Over 90% of the rock sole was roe bearing.
Source: C. Atkinson, Seattle, Wa.

factors influencing the price movement observed in the Japanese roe rock sole market, the relative importance of each is less apparent. For example, according to correspondence provided by AFTA, one DAP supplier reported that 1988 prices have decreased between 30% and 40% from the previous two years. This has led some to a tentative conclusion that this price decline is entirely the result of (real or anticipated) increases in supplies of roe rock sole on the Japanese market, both from greater DAP production and the entry of JVP operations. During approximately the same period of time, however, the currency exchange rate between the Japanese yen and the U.S. dollar declined over 51%. Given this dramatic increase in the relative purchasing power of the yen, all else being equal, the nominal Japanese market price for roe rock sole would be expected to decline, just as reported by the DAP supplier.

Whether the sale between supplier and demander takes place in yen, dollars, or some "third party" currency is not important, (unless the efficient operation of the currency market is constrained in some way) because ultimately, in the case of roe rock sole coming from the U.S. EEZ, yen will be exchanged for dollars. How the "benefits" from the change in the yen/dollar exchange rate are distributed among consumers, marketers/ distributors, and product suppliers depends upon the relative negotiating strength of each group in the economic chain.

The precise magnitude of this price change is dependent, among other things, upon the prevailing price responsiveness (that is, the elasticity) of supply and demand. We do not have empirical estimates of the relative price responsiveness of demand and supply for the Japanese market. If, however, it is assumed, as reported by several domestic sources, that aggregate demand is indeed relatively insensitive to price changes (inelastic), a sharp decline in nominal price in the Japanese market (caused, for example, by a precipitous drop in the exchange rate) would not be expected to result in a significant increase in quantity demanded in the market. Instead, it would result in a decline in aggregate gross revenues accruing to roe rock sole suppliers, as prices fall significantly more than quantity demanded increases.

There is also some evidence from the Japanese trade journals, summarized in BANR, that the exceptionally high prices cited in the Japanese market in early 1987 (reportedly in the range of 900-950 yen/kg; Tokyo wholesale, including handling and commission costs) were an anomaly and unsustainable. These prices reportedly resulted in considerable price resistance at every level of the roe rock sole market in Japan, and this resistance continues to influence the current price structure of the market.

Available data are inadequate for rigorous evaluation of the influence of these factors on the observed price decline. Clearly, however, there are numerous factors influencing the price behavior observed in the Japanese roe rock sole market over the period of interest. Therefore, to ascribe the decline in price entirely to any single factor, such as the anticipated (or realized) increase in supply of roe rock sole to the Japanese market, is incorrect.

5.4.2 Efficacy of the Proposals

It has been reported that some JVP operations which actually target upon rock sole have had difficulty exceeding 30% rock sole in their catch, with average hauls at or just below a 30% threshold. U.S. foreign fishery observer data for the 1988 JVP directed roe rock sole fishery are, as of now, too fragmentary to confirm this report. Reliable data are available for only 32 sampled hauls. These data indicate that approximately 20% of the JVP hauls targeting rock sole averaged less than 30% rock sole, on a per haul basis. For all 32 sampled hauls the average rock sole composition was approximately 49%. This sample is too small, however, to draw any firm conclusions about the fishery as a whole.

Given that the JVP apportionment of yellowfin sole for 1988 equals 189,544 mt (plus some portion of possible reserves of 38,100 mt), much of which could be taken early in the year, the

proposed 30% limit, specified in Alternative 2, could have resulted in legal retention of 81,233 mt or more of roe-bearing rock sole by JVP. If the market for roe-bearing rock sole is indeed constrained to approximately 15,000 mt and, if any increase in landings above that amount would result in substantial reductions in price and loss of market share to DAP suppliers, then the threshold specified in the proposal (Alternative 2) would not be effective in offering assurance of market stability to DAP fishermen.

This suggests that protection of a DAP roe rock sole market, limited in scale to that which apparently exists at present in Japan, would require much more severe constraints on allowable bycatch in the JVP yellowfin sole fishery, as well as in the JVP winter Pacific cod fishery prosecuted in this area of the Bering Sea. The precise cost of such action cannot be estimated without more information about how limiting the rock sole bycatch constraint would have to be to effectively retain the DAP market share. However, it seems likely, given the enormous harvesting capacity of the JVP fleet, that the constraint would have to be much below the 30% proposal, and could impose significant costs on JVP operators in the form of idle time due to mandatory closures and reduced harvests of yellowfin sole, Pacific cod, and "other flatfish".

Additional information, obtained from DAP rock sole harvesters indicates that spawning concentrations of roe-bearing rock sole have generally dispersed by the end of March. However, these sources note that spawning concentrations of roe-bearing rock sole first become available in the Bering Sea beginning in early December, (correspondence from Captain Jeff Boddington, Pacific Enterprise, and Captain James Hubbard, Northwest Enterprise, May 1988). Under these circumstances, given provisions of the proposed action, JVP could begin targeting roe-bearing rock sole throughout the month of December. Unconstrained by the JVP roe rock sole retention limitations, this fleet could harvest amounts of roe rock sole in excess of the aggregate demand for the product in the current Japanese market. Furthermore, JVP supplies of roe rock sole could reach Japanese buyers well in advance of DAP product deliveries.

Moreover, available scientific survey information indicates that rock sole spawning extends beyond April 1. If the fish remain in fishable concentrations, the proposed end of the JVP prohibition on that date would also fail to achieve the objectives of the proposal.

Quite apart from the issue of JVP expropriation of the Japanese roe rock sole market, it appears that Alternative 2 may not achieve its stated objective of market stability, even with respect to the DAP fishery. That is, if the Japanese roe rock sole market is limited geographically to the Kanto region and in size to approximately 15,000 mt of product per year (Correspondence, AFTA, April 1988), the present DAP capacity to harvest roe rock sole already exceeds the 15,000 mt market saturation volume. This suggests that retention of the price structure and market share, enjoyed by some DAP suppliers between 1985 and 1987, cannot be sustained short of guaranteeing exclusive rights of production to only a small portion of the total DAP industry.

Another alternative to the status quo, identified as Alternative 3, proposes to separate rock sole from the "other flatfish" category for reporting and allocation purposes, establishing a separate TAC for rock sole, and apportioning it through a split-season arrangement, similar to that currently used in the joint venture pollock fishery, to isolate harvest of roe rock sole from harvests outside of the roe-bearing season.

In order for this alternative to protect DAP markets, as described in the statement of need, the amount of the rock sole TAC apportioned to the DAP roe-bearing fishery could not exceed that which would be required to produce the approximate 15,000 mt product demand. Furthermore, bycatches in the JVP fisheries would have to be curtailed to prevent total supply from exceeding the markets capacity to absorb product. If the DAP fishery were permitted to produce at the 15,000 mt level, then no JVP bycatch could be retained or allowed.

Some 105 U.S. harvesting vessels participated in the joint venture flatfish fishery in 1988 (61 vessels in 1987). Had Alternative 3 have been in effect in 1988, operations of this fleet would have been adversely affected. There are two possibilities: allowing the yellowfin sole fishery to proceed with no retention of rock sole allowed or closing the yellowfin sole target fishery during the DAP rock sole "roe season" of January 1-April 1.

In the first case, significant amounts of rock sole would be discarded at sea and, in 1987, the fleet would have experienced revenue losses of about $500,000 (assumming rock sole harvest in February-March 1987 was 1,104 mt (Table 6.2) and price paid was $450/mt). The 1988 roe rock sole harvest by JVP is unknown, but anticipated joint venture harvests of up to 5,000 mt in 1988, reported in testimony at the January Council meeting, would produce revenues of approximately $2.25 million.

If on the other hand, flatfish fishing by JVP was not allowed during this period, the fleet would be idled to the extent that they could not participate in other fisheries. Revenue loss during this period might equal $24.3 million (using 1988 catch and 1987 price-$147/mt). Of cource, it is likely that much of this foregone catch could be made up after the April 2 opening of the JVP part of the flatfish fishery.

Regardless of the magnitude of lost revenue, the fleet would experience the costs of shutdown or idling, including the opportunity cost of idled capacity, logistical/support costs and the costs of idling fishermen and other crew.

Equivalent estimates of the value of the roe rock sole harvest to DAP operators are more difficult. Price information from the Tokyo wholesale market is available. However, BANR reports these quotes as "offers", not actual transactions prices. Transactions prices characteristically fall below the bottom of the reported "offer bid" range, (personal communication, Clinton Atkinson, May 1988). Further, these estimates include commissions, storage, and handling charges.

Employing a procedure to estimate costs of shipping, handling, and marketing of selected groundfish in the Tokyo Wholesale Market, developed by Mr. Atkinson through a contract with NMFS, an FOB vessel price in the DAP roe rock sole fishery was estimated. The preliminary nature of these estimates must be emphasized. The derivation is presented below in Table 5.3. Based upon the information and assumptions developed by Atkinson, and set forth in the table, reported Tokyo wholesale market "prices" (low 550 yen/kg; high 900 yen/kg.), and a nominal currency exchange rate of 125 yen/dollar, the estimated value of a 15,000 mt DAP fishery at FOB catcher/processor ranges from $47 million to $84 million.

5.4.3 Cost/Benefit Conclusion

It is not clear that either Alternative 2 or 3 to the status quo will be effective in preserving an exclusive window of opportunity for DAP harvest and sale of roe-bearing rock sole. This is because, under Alternative 2, JVP may be able to produce substantial amounts of rock sole product while remaining below the 30% targeting limit and because, under Alternative 3, JVP operations may be able to effectively target roe-bearing rock sole at times other than the January 1 - April 1 period. Additionally, DAP capacity may be in excess of the stated "market limit" of 15,000 mt.

Moreover, although the reason for recent price declines in the Japanese market may be related to increased U.S. supplies (DAH), it is not clear that this has been the only factor contributing to price variability. Changes in the yen/dollar exchange rate, cold storage inventory, and suggested market manipulation and broker expectations have also been influential in determining

Table 5.3 Estimated costs of shipping, handling, and marketing DAP roe rock sole in the Tokyo wholesale market.

Price/Cost Category	Value (yen/kg) Individual	Cumulative
Tokyo wholesale market price		550 - 900
Tokyo market commission (5.5%)	30 - 50	
Company selling price		520 - 850
Domestic Costs:		
Internal shipping costs	11	
Cold storage costs (120 days)	38	
Total domestic costs	49	
Selling price less domestic costs		471 - 801
Import Costs:		
Company's commission (3% C&F)	14 - 25	
Usury charge (rate x C&F)	14 - 25	
Insurance (1% C&F)	5 - 9	
Import duty (average 6.5% raw fish)	8 - 8	
Total import costs	41 - 67	
Selling price less domestic and import costs (C&F price)		430 - 734
Ocean freight (tramper) costs	35	
FOB vessel price		395 - 699

Notes: Costs derived from Atkinson, 1988. FOB price is wholesale market price less market commission, domestic costs, import costs, and ocean freight. C&F price is FOB price plus ocean freight. Usury charge assumes 9% U.S. prime rate at 120-day term.

price. Available data from the Japanese wholesale market indicate little dependence of price paid on quantity supplied.

In terms of revenue to the fisheries concerned, if DAP were given an exclusive window of opportunity to harvest roe-bearing rock sole during the period January 1 - April 1, if that period encompasses the time in which roe-bearing rock sole were found in commercially viable aggregation, and if the market is limited to 15,000 mt of harvest, DAP revenue could range from $47 million to $84 million at the wholesale level. It is not known whether, or by how much, there revenues might be reduced if joint ventures were allowed to continue harvesting roe-bering rock sole.

Balanced against this, should Alternative 3 be adopted, is the potential loss of vessel revenue to the joint venture fleet should harvesters be unable to make up the catch foregone during a period of exclusive DAP fishing for rock sole. This might amount to as much as $24 million should none of the foregone catch be available to JVP later in the year and should no JVP fishing for flatfish be allowed during the January-April period. A more likely cost to JVP will be the forced discard of valuable rock sole during the first quarter's flatfish fishery. Revenue lost may be in the order of $500,000 to $2.25 million.

Alternative 4 (Preferred), which would simply establish a separate TAC for rock sole, would accommodate the increased interest in this species and require separate accounting of catch and survey information, without impacting JVP harvests on the basis of alleged price sensitivity of DAP exports.

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6.0 EFFECTS ON ENDANGERED SPECIES AND THE ALASKA COASTAL ZONE

None of the alternatives would constitute actions the "may affect" endangered species or their habitat within the meaning of the regulations implementing Section 7 of the Endangered Species Act of 1973. Thus, consultation procedures under Section 7 on the final actions and their alternatives will not be necessary.

Also each of the alternatives would be conducted in a manner consistent, to the maximum extent practicable, with the Alaska Coastal Management Program within the meaning of Section 307(c)(1) of the Coastal Zone Management Act of 1972 and its implementing regulations.

7.0 OTHER EXECUTIVE ORDER 12291 REQUIREMENTS

Executive Order 12291 requires that the following three issues be considered:

(a) Will the amendment have an annual effect on the economy of $100 million or more?

(b) Will the amendment lead to an increase in the costs or prices for consumers, individual industries, Federal, State, or local government agencies or geographic regions?

(c) Will the amendment have significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of U.S. based enterprises to compete with foreign enterprises in domestic or export markets?

Regulations do impose costs and cause redistribution of costs and benefits. If the proposed regulations are implemented to the extent anticipated, these costs are not expected to significant relative to total operational costs.

These amendments should not have an annual effect of $100 million, since although the total value of the domestic catch of all groundfish species is over $100 million, these amendments are not expected to substantially alter the amount or distribution of this catch.

The amendments will not have significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of U.S. based enterprises to compete with foreign enterprises in domestic or export markets.

These amendments should not lead to a substantial increase in the price paid by consumers, local governments, or geographic regions since no significant quantity changes are expected in the groundfish markets. Where more enforcement and management effort are required, costs to state and federal fishery management agencies will increase somewhat.

8.0 IMPACTS RELATIVE TO THE REGULATORY FLEXIBILITY ACT

The Regulatory Flexibility Act (RFA) requires that impacts of regulatory measures imposed on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions with limited resources) be examined to determine whether a substantial number of such small entities will be significantly impacted by the measures. Fishing vessels are considered to be small businesses. A total of 1,421 vessels may fish for groundfish off Alaska in 1988, based on Federal groundfish permits issued by NMFS through March 12, 1988. In addition, 3893 U.S. vessels landed Pacific halibut in 1987.

Federal Permit Requirements

This part of Amendment 12 to the Bering Sea/Aleutian Islands FMP and Amendment 17 to the Gulf of Alaska FMP would affect about six floating processing vessels that have previously avoided the Federal fishing permit requirement by limiting their operations to the territorial sea and internal waters of the State of Alaska. Hence, a direct compliance cost for these vessels, and any others intending to operate outside of the EEZ but process groundfish from the EEZ, is to obtain a Federal fishing permit as prescribed under 50 CFR 672.4 and 675.4. These permits are issued without charge. Indirect compliance costs for such vessels are those related to the submission of weekly catch or receipt reports. The marginal cost of preparing and submitting these reports is minimized by the fact that the reported information is likely to be collected anyway for normal business purposes and for submission on the State fish ticket. Relative to the overall annual costs of operating a catcher/processor or mothership off Alaska (at millions of dollars per year), these marginal reporting costs (at an estimated $100 per year) will be insignificant. Consequently, this amendment is not likely to affect the competitive position, cash flow, or liquidity of the affected vessels.

Prohibited Species Catch (PSC) Limits for Groundfish

This part of Amendment 12 to the Bering Sea/Aleutian Islands FMP would apply only to JVP and foreign fishing vessels. In 1988 there was no foreign catching vessels and a maximum of 123 JVP catching vessels operating in the Bering Sea and Aleutian Islands management area. Direct compliance costs for these vessels will be zero if any prescribed PSC limit is not attained an no fishery closed as a result. If such a closure were to occur, its costs to these vessels would vary depending on when during the fishing year is occurred. Costs in terms of lost fishing opportunities would be large if a PSC-related closure occurred early in the fishing year. However, the groundfish PSC limits are designed to supplement the "single species rule". To prevent excessive wastage from discarding prohibited groundfish the "single species rule" will be used to extend, for as long as possible, retainable bycatches of groundfish, thereby minimizing the probability of a PSC-related closure prior to the end of the fishing year or at a time when substantial economic harm would result. Nevertheless, there is a remote but inestimable chance that a PSC-related closure would obviate over 100 fishing vessels from conducting profitable fishing and thereby substantially affect their competitive position and, therefore, their cash flow, liquidity and ability to remain in the fishery of any fishing firm.

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This part of Amendment 12 to the Bering Sea/Aleutian Islands FMP is an administrative change which indicates no compliance costs to fishermen, direct or indirect. Therefore, this amendment is not expected to influence the competitive position, cash flow, liquidity or ability to remain in the fishery of any fishing firm.

Rock Sole TAC

This part of Amendment 12 to the Bering Sea/Aleutian Islands FMP, which would establish rock sole as a target species separate from the "other flatfish" category, is an administrative change which indicates no compliance costs to fishermen, direct or indirect. Therefore, this amendment is not expected to influence the competitive position, cash flow, liquidity or abiltiy to remain in the fishery of any fishing firm.

Conclusion

Based on the preceding analysis, one part of this amendment (PSC Limits for Groundfish) may have significant effects on small entities.

9.0 FINDINGS OF NO SIGNIFICANT IMPACT

For the reasons discussed above, neither implementation of the status quo nor any of the alternatives would significantly affect the quality of the human environment, and the preparation of an environmental impact statement on the final action is not required by Section 102(2)(c) of the National Environmental Policy Act or its implementing regulations.

_____ _____

Assistant Administrator for Fisheries Date

10.0 COORDINATION WITH OTHERS

The Bering Sea/Aleutian Islands and Gulf of Alaska Groundfish Plan Teams consulted with representatives of the Alaska Department of Fish and Game, National Marine Fisheries Service, members of the Scientific and Statistical Committee and Advisory Panel of the Council, and members of the academic and fishing community.

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12.0 CHANGES TO THE FMPs

12.1 Summary

Amendments 12 and 17 were approved by the Council at its June 21-24, 1988 meeting. The amendments make the following changes to the FMPs:

12.2 Changes to Relevant Sections of the Bering Sea/Aleutian Islands FMP

12.2.1 Amendment 12 Summary

In Chapter 2.0, Section 2.1 entitled "History and Summary of Amendments," page 2-2, add the date _____ after Amendment 11.

Also add to the summary, page 2-4:

Amendment 12 on _____, 1988:

(1) Revised federal permit requirements to include all vessels harvesting and processing groundfish from the EEZ.
(2) Established a prohibited species catch (PSC) limit procedure for fully utilized groundfish species taken incidentally in JVP and TALFF fisheries.
(3) Removed July 1 deadline for Resource Assessment Document (RAD).
(4) Established rock sole as a target species distinct from the "other flatfish" group.

12.2.2 Federal Permit Requirement

In Chapter 14, Section 14.4.1 entitled "Permit Requirement," replace the existing sentence with the following:

"All U.S. vessels that are fishing in the Bering Sea or Aleutian Islands sub management areas or are receiving fish from the Bering Sea or Aleutian Islands sub management area must have a current fishing permit issued annually by the Secretary of Commerce. Information required when applying for a Federal fishing permit is contained in 50 CFR 675.4 of domestic regulations implementing the FMP."

12.2.3 Prohibited Species Catch Limits for Fully Utilized Groundfish

In Chapter 11 entitled "Optimum Yield (OY) and Total Allowable Catch (TAC)," add a Section 11.7 entitled "Prohibited Species Catch Limits for Fully Utilized Groundfish Species" and include the following text:

The timing of actions and procedure to be taken in establishing prohibited species catch limits (PSCs) of fully utilized groundfish species are as follows:

(1) September. Following the initial determination of TACs for all managed groundfish species as described in Section 11.3, the plan team will identify those groundfish species that are fully utilized by the domestic fishery. For those species, initial PSC limits will be calculated for joint venture and foreign fisheries using the best available bycatch rates obtained by NMFS observers from the respective fisheries and applying them to initial joint venture (JVP) and foreign (TALFF) TAC apportionments.

(2) September Council meeting. Council will review and approve preliminary PSCs and release the RAD for 30-day public review.

(3) October 1. As soon as practicable after October 1 the Secretary, after consultation with the Council, will publish a notice in the Federal Register specifying the proposed PSCs for JVP and TALFF. Public comments on the proposed PSCs will be accepted by the Secretary for 30 days after the notice is published.

(4) November. Plan Team prepares final RAD.

(5) December Council meeting. Council reviews public comments, takes public testimony and makes final decisions on annual PSC limits.

(6) By January 1 the Secretary will publish a notice of final PSC limits in the Federal Register.

(7) January 1. Annual PSC limits take effect for the current fishing year.

12.2.4 Resource Assessment Document Deadline

In Chapter 11, page 11-3, remove the phrase "by July 1" from the first sentence in the section entitled "Biological Condition of the Stocks."

12.2.5 Rock Sole TAC

In Chapter 14, Section 14.2 entitled "Area, Fisheries, and Stocks Involved," Item B. 2., replace existing language with the following:

> Target species -- are those species which are commercially important and for which a sufficient data base exists that allows each to be managed on its own biological merits. Accordingly, a specific TAC is established annually for each target species. Catch of each species must be recorded and reported. This category includes pollock, Pacific cod, yellowfin sole, Greenland turbot, arrowtooth flounder, rock sole, "other flatfish," sablefish, Pacific ocean perch, "other rockfish," Atka mackerel, and squid.

12.3 Changes to the Relevant Sections of the Gulf of Alaska FMP

12.3.1 Federal Permit Requirement

In Chapter 4, Section 4.3.1.1, entitled "Permits", replace existing text with the following:

> "All U.S. vessels that are fishing in the Gulf of Alaska or are receiving fish from the Gulf of Alaska must have a current fishing permit issued annually by the Secretary of Commerce. Information required when applying for a Federal fishing permit is contained in 50 CFR 672.4 of domestic regulations implementing the FMP."

13.0 CHANGES TO THE REGULATIONS

13.1 Summary

The following draft regulations would implement the preferred amendment alternatives approved by the North Pacific Fishery Management Council on June 24, 1988 for Amendment 12 to the FMP for Bering Sea/Aleutian Islands groundfish and Amendment 17 for Gulf of Alaska groundfish. Final approval by the Secretary of Commerce would change current federal regulations implementing the FMP under 50 CFR 611, 672, and 675 as indicated. After the Secretary receives the Council's approved FMP amendment, analysis and draft proposed implementing regulations, the regulations will be published in the Federal Register as proposed rules with public comment invited. Pending Secretarial approval and after changes are made due to public comments, the proposed rules will be republished as final rules.

13.2 Changes to Relevant Regulations for Bering Sea/Aleutian Islands

13.2.2 Federal Permit Requirements

In Section 675.1, entitled "Purpose and scope," paragraph (a) is revised to read:

> (a) Regulations in this part implement the Bering Sea and Aleutian Islands Groundfish Fishery Management Plan.

In Section 675.4, entitled "Permits," paragraph (a) is revised to read:

> (a) General. No vessel of the United States may fish for groundfish in the Bering Sea and Aleutian Islands Management Area or receive fish caught in the Bering Sea and Aleutian Islands Management Area without first obtaining a permit issued under this Part. Permits shall be issued without charge.

13.2.3 Prohibited Species Catch Limits for Fully Utilized Groundfish Species

Section 675.20 is amended by revising the heading of paragraph (a); by redesignating paragraphs (a)(6), (7), and (8), as paragraphs (a)(7), (8), and (9), respectively; by redesignating paragraphs (9) and (10) as (10) and (12) respectively and revising them; by adding new paragraphs (a)(6), (11) and (b)(1)(iv); and by revising paragraphs (b)(2)(i) and (ii) to read as follows:

Section 675.20 General limitations.

> (a) Harvest limits.

* * * * *

(6) Prohibited species catch (PSC) limits. When the Secretary determines, after consultation with the Council, that the TAC for any species or species group in any fishing year will be harvested by fishing vessels of the United States, the Secretary may specify PSC limits for that species or species group applicable to JVP and TALFF fisheries. Species for which a PSC limit has been specified under this paragraph shall be treated in the same manner as prohibited species under paragraph (c) of this section. Any PSC limit specified under this paragraph may not exceed an amount determined by the Regional Director to be the minimum amount necessary to harvest a groundfish species or species group for which there is a JVP or TALFF apportionment and which will not result in overfishing of the species for which the PSC limit is specified. The Regional Director will account for the JVP or TALFF catch of a species against an applicable PSC limit after any retainable JVP or TALFF amounts of that species

persons a prior opportunity for public comment, comments on the apportionment, retention or adjustment will be received for a period of 15 days after its effective date. The Secretary will consider all timely comments in deciding whether to make a proposed apportionment, retention or PSC limit adjustment or to modify an apportionment, retention or adjustment that previously has been made, and shall publish responses to those comments in the Federal Register as soon as practicable.

(ii) Comments provided for in paragraphs (a)(7) and (b)(2)(i) of this section should be addressed to Director, Alaska Region, National Marine Fisheries Service, P.O. Box 21668, Juneau, Alaska 99802. The Regional Director will make available to the public during business hours the aggregate data upon which any preliminary TAC, DAH, TALFF, or PSC limit figure is based or the data upon which any apportionment or retention of surplus DAH or reserve, or PSC limit adjustment, was or is proposed to be based at the National Marine Fisheries Service Alaska Regional Office, Federal Building, Room 453, 709 West Ninth Street, Juneau, Alaska. These data will be available for a sufficient period to facilitate informed comment by interested persons.

* * * * *

13.2.4 Resource Assessment Document Deadline

No changes to the regulations are required for this FMP amendment.

13.2.5 Rock Sole TAC

No changes to the regulations are required for this FMP amendment.

13.3 Changes to the Relevant Regulations for Gulf of Alaska

13.3.1 Federal Permit Requirements

In Section 672.1, entitiled "Purpose and scope", paragraph (a) is revised to read:

(a) Regulations in this part implement the FMP for Groundfish of the Gulf of Alaska.

In Section 672.4, entitled "Permits", paragraph (a) is revised to read:

(a) General. No vessel of the United States may fish for groundfish in the Gulf of Alaska Management Area or receive fish that were caught in the Gulf of Alaska Management Area without first obtaining a permit issued under this Part. Permits shall be issued without charge.

have been taken and notice has been given under paragraph (a)(9) of this section that the JVP or TALFF fishery must treat that species as a prohibited species.

* * * * *

(10) If the Regional Director determines that directed fishing for groundfish other than the species for which the TAC is achieved, as determined under paragraph (a)(9) of this section, may lead to overfishing of this species, the Secretary will, in the notice required by that paragraph, also limit such directed fishing for other groundfish by any method, including area closures, gear restrictions, or prohibition of directed fishing, that will prevent overfishing of the species for which the TAC is achieved.

(11) When the Regional Director determines that a PSC limit applicable to a JVP or TALFF fishery for a groundfish species has been or will be reached, the Secretary will publish a notice in the Federal Register prohibiting any further JVP or TALFF fishing which is likely to catch significant amounts of the species for which the PSC limit has been or will be reached for the remainder of the fishing year.

(12) When making the determinations specified under paragraphs (a)(8), (9), (10) and (11) of this section, the Regional Director may consider allowing fishing to continue or resume with certain gear types or in certain areas and times based on findings of:

(i) The risk of biological harm to groundfish for which the TAC or PSC limit will be or has been achieved;

(ii) The risk of socioeconomic harm to authorized users of the groundfish for which the TAC or PSC limit will be or has been achieved; and

(iii) The negative effect of prohibitions or restrictions authorized under paragraphs (a)(8), (9), (10) and (11) of this section on the socioeconomic well-being of other domestic fisheries.

(b) * * *

(1) * * *

(iv) Adjustments of PSC limits. When the Secretary apportions or reapportions groundfish under paragraph (b)(1) of this section, the Secretary may, by notice in the Federal Register, increase proportionately any applicable PSC limit of a species or species group if such increase will not result in overfishing of that species or species group. Any adjusted PSC limit may not exceed the amount determined by the Regional Director to be the minimum amount necessary to harvest the groundfish species or species group affected by the apportionment or reapportionment.

(2) Procedure. (i) The Secretary will provide all interested persons an opportunity to comment on the proposed apportionments, retentions or PSC limit adjustments under paragraph (b)(1) of this section before such apportionments, retentions or adjustments are made, unless he finds that there is good cause for not providing a prior comment opportunity, and publishes the reasons therefor in the notice of apportionment, retention or adjustment. No apportionment, retention or PSC limit adjustment may take effect until it has been published in the Federal Register as a notice with a statement of the findings upon which the apportionment, retention or adjustment is based. Comments provided for in this paragraph must be received by the Secretary not later than 5 days before April 1, June 1, and August 1, or other dates that may be specified. If the Secretary determines for good cause that a notice of apportionment, retention or PSC limit adjustment must be issued without providing interested